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Guest Editorial

Post War Medicine

THE last 25 years has been known as the magic quarter century in medicine. In no other similar period have so many advances been made in the unending warfare against disease and its sequelae. These revolutionary changes had their roots only in part in World War I as the ground work of these developments was already in the making long before hostilities began. The same observation can likewise be made on the present medical status in relation to the ensuing conflict. Theories and newer methods of procedure often languish in the laboratories until opportunity arises of sufficient magnitude to test their worth. Military hospitals and battle fields are, therefore, proving grounds for scientific advancement. Many such achievements by the warring nations are well known. The Russians have made outstanding contributions in the treatment of brain injuries as well as the localization of foreign bodies. The British have increased our knowledge of nutrition and doubtless the Germans, at a later date, will give a creditable account of their researches during this period.

American Medicine wrote a praiseworthy chapter at Pearl Harbor. Following this attack infection was almost nonexistent among the casualties and no amputations were made because of infected wounds. As an illustration of the rapid progress in chemotherapy it is interesting to follow the most recent development. In 1929 a certain Mold, Penicillium notatum, was developed. It manufactures a substance which checks the multiplication of gram positive bacteria. This new agent is many times more active than the sulfonamide drugs and is now being used in the treatment of staphylococcal and streptococcal human infections. While still in the experimental stage it is hoped that with improvement in methods of production this effective therapeutic measure may become widely available in civilian as well as military life. Reports today indicate that fatalities from navy casualties have been reduced from 5 per cent in the war of 1917-18 to approximately 1 per cent now. The low mortality from pneumonia, meningitis and other infectious diseases as found in our military hospitals is equally gratifying. These startling facts are harbingers of a new era in civilian medical service following the termination of this conflict.

The Post War era will see a rapid development of Industrial Medicine and Aviation Medicine. In these comparatively new branches special training will be mandatory to meet the peculiar problems in their respective spheres. It will be incumbent upon our medical schools to provide courses for these essential fields of endeavor.

Industrial plants have borne a heavy overhead because of casualties and loss of man hours due to sickness. They will welcome more exacting methods of prevention not only from a humanitarian point of view but also from the monetary angle.

Aviation Medicine is still in its swaddling clothes and it is too early to measure its

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mature stature. However, all are familiar with the great stimulus that the global warfare has given to the development and perfection of the airplane. The rate of speed and height of flying have imposed such a strain on the human mechanism that life cannot exist under these environments without adequate protection. At altitudes of 25 to 30 thousand feet the oxygen pressure falls to such a low point that anoxemia quickly develops. At 40 thousand feet even the breathing of 100 per cent oxygen fails to meet the needs of the situation. The modern airplane, however, is capable of reaching heights considerably in excess of this level. Speed is likewise responsible for a variety of sudden changes in the equilibrium of the body. These changes are capable of causing great disturbances of function which are manifested in the different tissues of the body, particularly the soft supporting tissues, the bony tissues and the organs suspended within the body cavity. With the rapid shifting of the position of the body fluids, vascular lesions and cerebral anemia accompanied by a diminished visual acuity may readily follow. Practical questions of importance have arisen from the necessity of protecting aviators from cold and exposure encountered at extremely high altitudes. These problems now concern chiefly the military needs but in the Post War era Aviation Medicine is destined to play no minor part in meeting the challenge for this new field of endeavor.

From present indications it appears that in the war zone one of the greatest problems of the Medical Corps is not infection but the ravages of communicable diseases. Although the ancient plagues of armies are today much less prevalent and better knowledge exists for their effective control nonetheless their potential dangers cannot be overlooked. Malaria is a case in point. Surgeon General Parran recently stated, "outside of mental diseases there is no other disease of comparable importance against which we have made less progress during my generation". With large numbers of our men returning from infected areas and the epidemiologic factor confronting us from rapid air transportation widespread malaria in our country is a potential menace. This may well be true also of our Post War period.

One of the most auspicious auguries for the public welfare is the present interest in the extension of Public Health Coverage to the entire nation. Already the House of Delegates of the American Medical Association has voted unanimously its approval of the adoption of such a plan. Forty million of our people live in communities or in areas in which there is no access to the full time services of a professionally trained medical officer of health. In the state of Virginia there are 52 counties without a well trained health service. Many of these counties are either too thinly populated or too much handicapped financially to support this enterprise. This is a problem which must be solved to the satisfaction of the citizens of Virginia if we are to meet our responsibilities in matters of health in the state at large. Multiple county Health Departments sponsored by state funds may be the answer.

Nutrition will play a larger part in Public Health activities. Due to food shortage in the present emergency the civilian population will become more conscious of food values and food substitutes and will rely on the leadership of Public Health Officials for guidance.

The Post War problem of nutritional disease must be considered from two points of view, the general nature and extent of the problem and its scientific and technical aspects. According to Youmans the magnitude of the problem will be determined by four factors; first, obviously, the degree and duration of food shortages; second, the number of persons affected; third, the level of nutrition which at this time is considered to represent disease and, fourth, the extent to which responsibility for the nutrition of populations is accepted by responsible agencies. Although a low level of nutrition

will be manifest in some countries Youmans further states "it appears unlikely that any significant amount of serious nutritional disease will be found in this country as a result of the war. Rather it is probable that increased public interest, a better distribution of essential food among the various classes of population through governmental control, rationing and increased purchasing power, and the adoption of certain public policies in relation to food supplies and production will result in an even better state of nutrition in general than existed before the war. Such certainly seems to be the situation in England where definite gains in nutrition of the general population seem to have been secured because of the war and in spite of the difficulties caused by the war. The problem will be to secure the potentially tremendous improvement over present day levels of national nutrition. Medically it would mean the end of nutritional disease except for sporadic instances of conditional deficiency. The gains in public health, vigor and accomplishment are difficult to estimate".

Already a noteworthy national conference has been held on planning for War and Post War Medical Services. The program focused the attention of the medical profession and the interested public on the nature of the problems peculiarly medical which will confront the world.

Insurance Coverage for hospitalization has proven a sound undertaking and will doubtless continue to operate to the advantage of the patient as well as the institutions. No other health measure has surpassed this service to the general public in economy and in more efficient treatment. A similar setup for covering medical and surgical expenses is now in the experimental stage and under judicious restrictions it is destined to play an important role in the Post War era. It is recognized that this problem has many angles and is infinitely more complicated than hospitalization. However, the obstacles are not too great to be surmounted and a workable plan does seem possible without infringing on the rights of the patient or restricting the liberties of the physician. This is distinctly a medical problem and should be solved by them before it is promulgated by a bureaucracy.

Post War Medicine has a brilliant future unless it is inhibited by Federal regimentation or the creation of socialized medicine. Nothing is more deadly to scientific advancement than laws regulating the institutions where such endeavors are in progress. Just how far socialized medicine will become a reality is impossible to predict at this time. An ominous forecast in this direction is the recent ruling of the Supreme Court by which medical service may be legally sold through group insurance to individuals. Obviously the free choice of a physician is removed and the incentive for a higher standard of medical practice is eliminated. Wherever this deviation from medical ideals has been tried the progress of medicine has suffered and the individual has paid the price. Post War Medicine will rise or fall on this issue. Barring this eventuality medical progress will be reflected in a greatly lengthened life expectancy and a reduction in days lost by sickness.

Planning for Post War Medical Service is now one of the most urgent problems confronting the medical profession and is a subject sufficiently large to demand the best thought that our nation can afford. Last February the report of the National Resources Planning Board was sent to Congress by the President for consideration. This report did not deal with details; it consisted largely of generalizations which inclined toward the general point of view that action toward advancement of the health of the nation proceed along the lines of--

***(1) Federal appropriations to aid states and localities in developing a system or regional and local hospitals and health centers covering all parts of the country.**

*Editorial, *J.A.M.A.*, 122:1, 38-39, May 1, 1943.

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(2) Assurance of an adequate and well distributed supply of physicians, dentists, nurses and other medical personnel.

(3) Expansion and improvement of public medical care for needy persons through larger appropriations and through increased coopertaion by and with the medical and dental professions.

(4) Immediate action by government in cooperation with the medical profession to formulate plans which enable the patient to budget expenses over a reasonable period and to contribute towards the costs of care according to his ability and which at the same time assure to medical personnel a decent livelihood commensurate with the high costs of their professional training.

On the medical profession primarily rests the obligation for much of the active work of reconstruction and rehabilitation of the Post War world. We have been accused in the past with some justification that the mechanics of medicine have not been kept sufficiently flexible to meet the new issues as they arise. Be that as it may the changing world is at our door. Evidence is accumulating that the cost of adequate medical care is not within the reach of many civilians and some plan for meeting this issue must be formulated. The returning soldier will have become accustomed to complete medical service and will not willingly return to his former status. In order to protect the ideals of medicine and to prevent a lowered standard of practice, a comprehensive plan of coverage is imperative. Do we assume the leadership or do we await the verdict of a bureaucracy?

WILLIAM H. HIGGINS, M.D.

Floral Emponym (4)

IN 1760 John Clayton wrote from his home in Gloucester to John Bartram as follows:

"DEAR FRIEND:—

"I have sent you, inclosed, some seed of a new plant which I presume is a stranger in your northern part of the world. Indeed, it grows here only in the southern parts of this colony. I have it in my garden, but have quite forgot whether I showed it to you, when I had the great favour of your company. If I did, I believe I told you that it was to be called Amsonia, after a doctor, here; but I think the name inscribed upon the inclosed more proper, as it answers to the particular form of its seed. . . ."

Among writers upon Botany there is a great confusion as to the identity of Amson. Norman Taylor's Garden Dictionary states that Amsonia was "named for Dr. Amson, an 18th century Virginian physician". Bailey says it was named for Charles Amson, a colonial physician in the eighteenth century, a statement that occurs also in Webster's New International Dictionary. Peter Henderson says it was named in memory of Charles Amson, a celebrated traveler, whereas Britton and Brown make the statement that Amsonia is named for Charles Amson of South Carolina. Asa Gray is more noncommittal with the statement that the plant is said to be named for Mr. Charles Amson. However, in Gray's New Manual of Botany, 7th ed. 1908, there is the statement that it was named for Dr. Amson, physician of Gloucester, Virginia, in 1760, and friend of John Clayton.

Medical literature is entirely silent on Charles Amson. Dr. John Amson, the only Amson listed in Swem's *Index*, was apparently in the vicinity of Williamsburg as early as 1738. The York County records show that Dr. Amson acquired six lots in Williamsburg in 1746. These lots on Scotland Street were later bought by Dr. William Carter. On March 24, 1751, the Reverend John Blair wrote in his diary that he "saw Amson's Gardens, etc." The York County records indicate that Dr. Amson died sometime prior to July 29, 1765. Hunter D. Farish, Director of the Department of Research and Record, Colonial Williamsburg, to whom I am indebted for much of the above information, suggests that the name "Charles was mistakenly used for 'John'."

THE NAVY DOCTOR IN WAR*

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It is not my intention to discuss with you tonight any one problem of Medicine and try to tell you just how it affects the Navy. Rather, I want to tell you something about the Navy Medical Corps, its history, its functions, its problems, and some of the things it has learned from this war. Necessarily, because I shall have to cover so much ground, my remarks will be sketchy and incomplete, but I hope they will be full enough to give you something of a picture of our work, the details of which you can fill in in your leisure moments and as you hear more and more of the activities of the Medical Department of the Navy as this war goes on.

History tells us that the Greeks and Phoenicians carried physicians with them on their sea voyages and that these men served usefully in battle, and from the writings of Homer we gather that some of the virtues of sulphur were known in the long distant days of which he wrote. Roddis,[1] in his valuable book, "A Short History of Nautical Medicine", shows that the Romans carried medical officers on their larger ships of war, and, strange as it may seem, the proportion of medical officers to crew was about the same as ours is today, 6½ medical officers to 1,000 men. Also, from this book, we learn that surgeons were classed as non-combatants and enjoyed the same immunities that we now enjoy under the Geneva Convention. What good these do to a medical officer of a cruiser or carrier when it is sunk, I am unable to say. In modern warfare, the term "non-combatant" is a misnomer.

Roddis also tells us that in the 14th and 15th Centuries the practice of quarantine came into being. It was demanded by ships' surgeons, some naval and some on merchant ships, because of the known introduction of plague by ships coming from ports where it was prevalent.

About this time there also came the change from oars to sails as means of propulsion. This meant longer voyages, larger ships, and many closed decks which led to problems of ventilation and proper feeding, for we must remember that in those days none of our modern methods of refrigeration and adequate storage of foods were known. As a result, scurvy became the great scourge among sailors. It was not until 1753 when James Lind published his "Treatise of the Scurvy" in which he showed that lemon and orange juice would prevent the disease, that real progress was made. It is hardly too much to say that this discovery, plus the later introduction of vaccination against smallpox, were largely responsible for the magnificent successes of the British Fleet against its enemies. Now, of course, we know that the virtue of lemon juice lies in its large content of ascorbic acid, something not even dreamed of by Lind, nor by the Fleet Surgeon who later accepted his findings and applied them to the British Navy, Sir Gilbert Blane.

The birth of the American Navy occurred October 30, 1775, when the Continental Congress established a Naval Committee and a few days later appropriated $100,000 to build thirteen ships of war. To these ships were assigned Surgeons and Surgeons' Mates, and since that time Medical Officers have been a part of the complement of naval vessels of any considerable size. As so often happens after a war, our navy practically disappeared following the close of the Revolution, but it was not long before world events necessitated the building of more and larger naval vessels to protect our commerce which was becoming world wide. All of the ships authorized in 1794 became famous in our history, two of them, the Constitution and the Constellation, making names for themselves which will never die. All of these ships carried medical officers, many of whom performed noble work under trying conditions and with extremely limited facilities. It is a far cry from the ill-equipped sick bay of those days to the modern hospital we now find on all our larger ships, with its compact but fully-equipped operating room, laboratory, pharmacy, and wards in which all

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manner of illnesses may be handled with as much ease and success as is possible in our hospitals on shore. Nonetheless, the problems of the sea-going doctor in the early days were similar to those met with in these days, and naval surgeons then, just as we must today, realized that Naval Medicine is a distinct specialty which, like other medical specialties, requires hard work and much study for its mastery. Naval Surgeons, then as today, accompanied their shipmates on dangerous missions and covered themselves with honor and glory just as our medical officers are doing today in the South Pacific, North Africa, the North Atlantic and wherever the ships of our Navy may be in their search for and contact with the enemy.

In 1821 the first naval hospital was established in Washington. Since then, naval hospitals have been built at many ports along both coasts and at inland naval stations, until today we have about 40 naval hospitals within the continental limits of the United States, ranging in size from 300 to 4,000 beds, to say nothing of the large number of mobile and advance-base hospitals which are scattered over the face of the globe, wherever our Naval and Marine Corps forces are gathered in sufficient number to require them. These hospitals are making history and performing feats of medicine and surgery far beyond those believed possible in any previous war.

As has been already stated, we of the Navy consider Naval Medicine a specialty, a specialty in which we must become proficient if we are to render useful service. Any other specialty we adopt must be secondary to this one.

Specialization in the Navy is encouraged and in times of peace a large number of medical officers of the Regular Navy are constantly under instruction in our own hospitals and at recognized Graduate Schools perfecting themselves in the various branches of medicine and surgery, so that we may have qualified men of all specialties on the staffs of our hospitals and hospital ships. Obviously, in time of war, this program of training in the specialties must be curtailed, since the relatively small number of medical officers of the Regular Navy must be placed in positions which require men trained in the primary specialty of Naval Medicine. This is where our Reserves come to the rescue. They far outnumber us of the Regular Navy and form the bulk of the medical officers now on duty in our hospitals, at our training stations, air stations, and other activities. Many of them are serving at sea or with the Marines. Where it is possible they are given duty which allows them to practice the specialty which was theirs in civil life. This is not always possible, and I am glad to say that almost without exception these men have accepted any duty given them without murmur and have done a good job. All that most of them beg for is active duty; the nearer the fighting lines the better. We are proud of our Reserves and feel that they are a choice lot. Whether they are working in their specialty or in some other field, I am sure that those who return to civil life after the war will be better doctors because of the service they have performed in the Navy.

But time is passing and I do not wish to use all of that allotted to me in relating to you the history of the Navy and its Medical Department. Suffice it to say that since 1775 there have always been doctors in the Navy who have gone about their work efficiently and quietly. Some have made great names for themselves in War and in Peace. Most of them have played their parts and passed on without reaching any great heights in the halls of Fame, but it may be said of almost all of them that they have been faithful in the performance of their primary duty, "To Keep As Many Men At As Many Guns As Many Days As Possible." How this is being accomplished in the present war is already almost history, but at the risk of repetition, I shall try to present to you some of the highlights of what our medical officers, both Regulars and Reserves, are doing today to preserve life and limb and how they are doing it.

From the time that World War II started in Europe it was apparent to many in the United States that we must eventually join in. Unfortunately, there were some in high places who felt that we could sit on the side lines, lend our moral support and furnish supplies, but avoid the unpleasant consequences of actual entrance into the conflict. Even after our relations with Japan became so strained that it was apparent to many that they must break, some said it "could not happen here". As a result, preparedness for war was dangerously retarded. Fortunately, the Surgeon General of the Navy, Admiral McIntire, is a clear thinker and did not share in this false optimism. As a result,

when Japan struck its dastardly blow at Pearl Harbor, the Medical Department of the Navy was in a state of readiness and was able to meet the load thrown upon it in a highly satisfactory manner. Since then, of course, many lessons have been learned through bitter experience.

BURNS

One lesson learned at Pearl Harbor and since is that in this war burns are to be a major item among our casualties, and that many of them would be flash burns, while others would be caused by men having to go overboard in water covered with burning oil. It became evident at once that flash burns could be prevented by keeping the body surface covered, even by the flimsiest sort of clothing. Consequently, men in zones where combat is likely are required to wear over-all clothing. As a result, flash burns of the body and extremities are becoming less of a problem. Burns caused by contact with flaming oil are not so easily prevented and still form a large part of our casualties. However, we have learned something about the treatment of burns and any man who survives them to reach medical care now stands an excellent chance of recovery.

At the time of the attack on Pearl Harbor the treatment of burns had not been so well standardized as it now is, but in almost every case tannic acid in some form was used. The results were good, but we know how to make them better. After much study of reports, research work, and consultation with the National Research Council, we have adopted a plan of treatment of burns that we believe will stand the test of time and result in greater saving of life than any other form of treatment now available. This plan may be divided into two parts, (1) First Aid Treatment and (2) Definitive Treatment.

The objects of *First Aid Treatment*, and this means treatment at the first opportunity, whether on a field of battle or when a man is dragged out of a burning compartment of a ship, or out of the water covered with flaming oil, are: (1) To protect the burned area, which is an open wound, from further contamination. (2) To prevent and combat shock. (3) To relieve pain. (4) To minimize fluid loss. Naturally, the first object is achieved by care on the part of the attendant, but because the burned area may already be contaminated, we also give Sulfadiazine, 4 grams, by mouth at once in all cases. Next, we administer plasma intravenously if conditions will permit, and it is remarkable how adept our medical officers have become in giving plasma under conditions that would make it appear impossible to most of us. This, and the prompt administration of morphine for the relief of pain are the two great preventives of shock, the major cause of death in severe burns as well as other injuries.

The Navy has adopted the syrette containing ½ grain of Morphine Tartrate as its standard, because it is easily administered and requires no preparation. So far as we know, this dose is not too large for any man under battle conditions.

We have given up the use of tanning in any form for first aid treatment of burns, because we have learned that infection may occur under an eschar and that pain may be relieved as promptly by simple boric acid ointment or vaseline as by tannic acid, either in ointment form or used as a spray. Over the ointment, we apply the usual sterile dressings and a firm bandage. If an extremity is involved, we advise the use of a splint, if one be available and time permit. In all burns of second or third degree, 0.5 c.c. of tetanus toxoid is injected intramuscularly, provided the man has already received his initial immunization. In cases of burns of the eye, 2 per cent butyn opthalmic ointment is used.

Definitive Treatment is begun as soon as the casualty arrives at a place where it may be given. Under conditions which have prevailed in the Navy until now, thanks to rapid evacuation by air, this usually means his early arrival in a well-equipped hospital in a zone of comparative safety. Definitive treatment is little more than a continuation of first-aid treatment under better conditions and has the same objectives: to combat shock, relieve pain, prevent loss of fluid and replace that already lost, and avoid contamination. In the hospital, controlled use of sulfonamides is continued, care being taken to guard against kidney damage; morphine is given as indicated for the relief of pain; and intravenous injections of plasma are given as frequently as is necessary to combat shock. In addition, glucose solutions are given to compensate for fluid loss, and saline solution when indicated in cases of persistent vomiting to overcome the loss of minerals.

All of these measures are life saving, and nothing more should be done until the danger of shock has passed. Then, active surgical interference may

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be necessary. This will consist, in most cases, of debridement and the treatment of the resulting wound, followed in many cases by skin grafting.

We advocate the tanning or eschar treatment only in extensive flash or second-degree burns of the trunk which are seen within twelve hours after the burn occurs and in which strict asepsis is possible. Then, rapid tanning by tannic acid spray and silver nitrate is sometimes advisable. Slower methods of tanning are known to produce liver damage in many cases and should not be used.

Baths or packs of physiological saline solution have been found useful in the treatment of burns of the face, feet, hands, fingers, and the genitalia, and are frequently used.

Blood plasma has been our sheet anchor in the prevention of shock and has been worth more than its weight in gold. However, storage space is precious on board ship, so we are going over more and more to the use of human serum albumin as this becomes available. It can never take the place of plasma entirely, but it does seem to be equally effective in combating shock.

IMMERSION BLAST INJURY

That death may occur from the effects of blasts of high explosives without any external evidence of injury has been known for a long time, and much thought has been devoted to determining why this should be. However, it was not until this war that injury to men in the water caused by the explosion of depth charges and other underwater explosions became a matter of serious import. Even at Pearl Harbor it was noted that many men swimming to safety suddenly became still following an underwater explosion somewhere in their vicinity and were dead when picked up, although no signs of injury could be found upon their bodies. This led to an investigation of the cause of death and how to prevent it. At the U. S. Naval Hospital, Pearl Harbor, under the direction of Captain McMullin, Commanding Officer, studies were carried on to determine the mechanics of immersion blast injuries and the pathological effects. Captain McMullin[2] says that "The mechanism and biophysics of immersion blast injuries, whatever the details may be, result principally in damage to the lungs and to the walls of certain loops of intestine." Analysis of the history and physical findings in cases of immersion blast injury who survived to reach a hospital soon revealed facts that should be almost self-evident, namely, that the distance from the blast is a major factor in determining the degree of injury; that the position of the man in the water is of importance; and that the wearing of a life jacket affords some protection against injury.

Thirty-five (35) cases of immersion blast injury were admitted to the U. S. Naval Hospital, Pearl Harbor, five (5) days after they received their injuries. Of these, fourteen (14) showed symptoms of severe abdominal injury. Of these, four (4) died. Of the remaining ten (10), only two (2) were operated upon, the others recovering without surgical intervention. Conservatism was practiced with good results.

Of the thirty-five (35) cases admitted, thirty (30) showed abnormal densities in one or both lungs upon x-ray examination. All showed some degree of gaseous distention of the small intestine. Four showed evidence of perforation.

Of the four (4) cases that came to autopsy, three (3) showed multiple perforations in various parts of the intestine with diffuse peritonitis, while one showed no perforation, but massive hemorrhage from multiple torn vessels. In this case, there had also been massive hemorrhage into both pleural cavities.

It was apparent from all cases seen that the region of the cecum sustained the greatest injury.

How severe neurological damage is likely to be in immersion blast injuries is still open to question, but Lieutenant Hamlin,[3] who studied the Pearl Harbor cases, concludes that, "——— the nervous system, although less vulnerable than the abdomen or chest to underwater explosion, is liable to a relative degree of injury which should always be looked for by clinical examination and lumbar puncture."

The treatment of these cases, as of most cases of severe injury, consists chiefly of conservatism. Counteract shock by plasma and intravenous fluids; give nothing by mouth; use Wangensteen suction; supply oxygen; give whole blood transfusions if indicated; administer sulfa drugs intravenously; and keep up the vitamin supply.

Stimulated by the reports of underwater blast injuries received at Dunkirk and reported by Hooker in 1940, and the cases I have just mentioned reported from Pearl Harbor, Greaves[4] and others at the National Naval Medical Center undertook animal experiments to determine the exact physics and

pathology of these injuries. From their studies they conclude that:

"1. The presence of gas or air in the tissues is the determining factor in the production of underwater blast injuries.

"2. The lungs are particularly susceptible to injury. The gastro-intestinal tract is also susceptible but to a less degree.

"3. Injuries occur in the skull and upper respiratory passages when the head is submerged at the time of explosion.

"4. Pathological changes were not observed in solid organs and in tissues that do not contain air or gas.

"5. The underwater concussion wave produces tissue injury by shredding the tissues as it passes into a gaseous medium within the body.

"6. Kapok and foam rubber prevent or minimize the injurious effects of the compression wave."

Based upon these findings, instructions have been issued to all men of the Navy which, if carried out, should result in a lowered incidence of serious immersion blast injuries.

WOUNDS

So much has been published on the treatment of wounds in this war that it seems almost unnecessary for me even to mention the subject. However, wounds still form a large proportion of the casualties of war, and are still the thing in which surgeons are most interested. This war, so far, and so far as the Navy is concerned, differs from former wars in one important respect. The proportion of fatalities to non-fatal casualties is much greater than it has been in any previous war. This is to be expected, because of the nature of the warfare. Naval vessels and merchant ships are being sunk by torpedoes and bombs from beneath the water and from the air. The death-dealing forces of these weapons of war are well known. They kill outright and those who escape destruction usually escape serious injury. However, a large number are seriously wounded and, since the Navy is also responsible for the medical care of the Marines, our officers have seen and treated more wounded men than has been their experience in all previous wars.

For first-aid treatment, the Navy has advocated and still uses the sulfonamides in some form. Our first-aid kits carry sulfanilamide for topical application to wounds, and sulfadiazine for internal use, and results have been remarkable. Whether or not the sulfonamides were responsible, we know that the death rate from wounds of those evacuated from the Solomon Islands, and this includes all types of injury, has been much less than one (1) per cent, a remarkably low rate when we consider the extent of injury many of these men suffered. Plasma, plus sulfonamides, seemed the answer. Now, we are not so certain, for doubt has been cast upon the value of the local use of sulfonamides. In fact, investigation tends to show that in contaminated wounds, the dusting in of sulfa drugs does more harm than good, although in clean wounds, sulfa compounds may inhibit infection. There can be no question, however, as to the efficacy of sulfa drugs administered internally. They do reduce the incidence of infection. If not effective locally, at least they exert a beneficial effect in the prevention of general sepsis; and general sepsis, not local infection, is what kills. In wounds of the skull, chest, and abdomen the local use of sulfonamides is advocated even by those who doubt their local efficacy. Their value in these cases may well be due to the recognized absorptive capacities of these cavities.

Severe non-fatal wounds usually mean severely damaged tissues. Research apparently shows that severely damaged tissue develops inhibitors to the beneficial action of sulfa drugs. The search is now on for anti-inhibitors. Hope is held that these may be found.

The treatment of wounds is far from being a closed subject and the Navy is ready to adopt any method that may be shown to be effective. What we want is good results, whether they be obtained by the use of chlorine compounds, as recommended by many; or penicillin, which is just coming into quantity production; or by the use of sulfa drugs, combined with judicious debridement, which is now our method of choice. We shall not discard that which has been proved to be effective until something else has been proved better.

MALARIA

Earlier, I told you that the primary specialty of a doctor in the Navy is Naval Medicine. However, there is another specialty in which every medical officer who makes the Navy his life's work must be proficient. This is, Tropical Medicine. Even in

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times of peace, the duties of a naval medical officer carry him into distant parts of the world where the diseases with which we are not so familiar in the United States are prevalent. He must be able to recognize them, know how to treat them, and, above all, prevent them from becoming a serious menace to the men for whose physical well being he is responsible.

Among the tropical diseases which it is the Naval Medical Officer's duty to prevent, and cure if prevention fails, are: Malaria, dengue, the dysenteries, typhus, cholera, yellow fever, plague, diseases due to intestinal parasites, filariasis, and many others. All of these, with the exception of malaria, may seem of only academic interest to most of you, but it is not beyond the realm of possibility that any or all of them may become problems with which you will have to deal before this war is over, or when our soldiers, sailors, and marines return after victory is won.

Of all of these diseases, the one of greatest importance, and the one that has been and will be a real factor in the successful outcome of the war is malaria.

In spite of the fact that the presence of malaria was known in many of the islands of the South Pacific where our men have been fighting, and steps were taken to protect our forces against it, this disease has hit us, and hit us hard. Thanks to the foresight of our Army and Navy, all men going into these highly infected areas have been required to take atabrine as a prophylaxis against the disease and every effort has been made to guard against their inoculation by infected mosquitoes. Owing to the type of warfare, complete protection has not been possible, so that a large number of our men after removal from these islands and the cessation of the use of atabrine have developed the disease. Fortunately, most of them, with proper treatment, will recover with little or no serious after effect.

It must be remembered that there is no "prophylaxis" against malaria. Even quinine and atabrine only suppress it and when their administration is stopped the disease is likely to develop. Without these "suppressive" measures, however, a military operation in a heavily infected area, such as the Solomon Islands, would probably be a failure. No man can fight at his best when he is shaking with a malarial chill. Quinine and atabrine, properly administered, in such areas are certainly as important as an adequate supply of guns and ammunition. Planes without pilots are useless and pilots with malaria can not fly.

At the moment malaria does not concern us at home greatly, but we must bear in mind that anopheles mosquitoes are found in most parts of the United States and that wherever anophelines are present, malaria is a potential menace. All that is required is a female anopheles and a carrier; and there will be many carriers among our returning forces. It will be well, therefore, for most of us to brush up a little on our knowledge of malaria and be on the lookout for its appearance in our communities.

Other tropical diseases may also prove to be problems for all of us—Filariasis, for example. This is a disease which has given most of us no concern. Yet, our marines are beginning to suffer from it, and are developing lymphangitis and elephantiasis, so it is something for which we must be on the lookout, no matter where we may be practicing.

I think we may safely trust to the Public Health Service and its Quarantine to protect us from most of the other tropical diseases I have mentioned. Should any of them break through the barriers, it does not seem likely that they could assume epidemic proportions. However, it is evident that we must be on our guard against them and that all of them are potential menaces to the health of our people. Therefore, I feel very strongly that Preventive Medicine should be given a much more prominent place in the curriculum of most of our medical schools than it occupies today.

I could go on for a long time and tell you more about what the Medical Department of the Navy stands for and what its members are trying to do, but feel that I have said enough to show you that we have real problems which we are trying to meet, and that our success or failure to meet them will play a large part in winning or losing this war.

There are many problems of Naval Medicine which, because time limits me, I can only mention, but each one of which is worthy of serious consideration. Among them are: *Aviation Medicine,* with its problems of oxygen supply to aviators flying at high altitudes and the prevention of blackout under combat conditions; *Submarine Medicine,* with its pressure and escape problems; *Research,* attempting to

solve questions pertinent to winning the war and to make life more worthwhile after we win it; *Neuropsychiatry,* attempting to prevent entrance into the service of those who are unfit and to rid the service of them before they become liabilities to the Government; *Venereal Disease Control,* with all its difficult problems of cooperation with local law enforcement officers and, when cooperation fails, using force; *Procurement and Distribution of Medical Supplies,* a difficult and essential duty; *Instruction in First Aid,* and we must not think that because we are doctors we know all about this; training so that our action will be automatic under any condition of stress is necessary; and, finally, the problems of *Rehabilitation* of those who are injured in service, physically or mentally. All these are matters with which the Naval Medical Officer must concern himself.

The papers have been full of the virtues of plasma, the sulfa drugs, vitamins, and various other special methods of treatment which have been used during this war. All deserve great credit, but, to my mind, these drugs and methods deserve less credit than do the men who have applied them. Without good judgment and a knowledge of how to use them they might have been less than useless.

It is evident from what I have told you that doctors of the Navy have a serious duty to perform. Most of them do it gladly and efficiently, and without thought of any reward other than that which comes from a knowledge of duty well done. Doctors whose life work is not with the Navy, but whose patriotism has caused them to serve with us in time of war soon catch this feeling. We are very proud of our Reserves and realize that without them the responsibilities of the Medical Department of the Navy in time of war could not be met.

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MANAGEMENT OF PLEURAL EFFUSION ASSOCIATED WITH PNEUMOTHORAX

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The occurrence of pleural effusion at some time during the course of a patient with pneumothorax is accepted as almost conventional. Since most of these effusions are relatively innocuous it is quite easy to follow the path of least resistance, also known as "watchful waiting", with too frequent discomforting results. With such in mind we have gradually adopted a routine in dealing with chest fluids, quite flexible in itself, which has proven satisfactory. The immediate goal is the maintenance of an adequate collapse with the prevention of empyema. The method is repeated aspiration.

In our practice approximately 85 per cent of the fluids complicating pneumothorax have yielded acid-fast bacilli and we accept this as the cause of the preponderance of effusions. Anaerobic cultures have been of no assistance. The etiological factor of the remainder falls to conjecture and includes the trauma of pneumolysis and the puncturing needle, introduction of air as a foreign body, novocaine, and extravasted blood.

If the effusion is small the patient is frequently asymptomatic and the fluid is detected during fluoroscopy. This is another reason why we believe it imperative that each patient be fluoroscoped prior to each refill. On the other hand, a small amount of fluid may cause considerable discomfort or alarm the patient by the noise or sensation imparted during a change of position. The usual complaints at the onset are of a "new chest cold", malaise, anorexia, and of chest pain of varying intensity. Massive, rapidly forming effusions may cause considerable dyspnea due to pressure on the heart and contralateral lung.

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Upon detection of fluid in the chest, with or without symptoms, the patient is notified, stating that, while in all probability it is of no prognostic significance, its greatest import is the necessity for closer observation. The patient is then requested to return at a shorter interval even though it be for visualization only. A patient who has a systemic reaction because of an effusion will generally prefer bed rest on his own volition. We utilize bed rest in the presence of fever or other symptoms, but only for the relief of these symptoms, and not with the belief that it has any direct influence on the appearance or the course of the effusion. During the past 14 years there has been no patient unable because of fluid to come to the office for treatment.

A small amount of fluid raises the question of whether or not to be aspirated. We answer this by making an attempt, when it is at all feasible, for these reasons:

a. Many empyemas appear suddenly and are small in amount, often producing no early symptoms.
b. The difficulty of accurately estimating the amount of the effusion.
c. The simplicity of the procedure.

Fuid so small in amount that it is barely perceptible in the costophrenic angle, and whose level shows no change when the patient is tilted, is generally insufficient to be encountered by the needle and for the time being is observed only.

Routine cultures are made from the fluid removed at the initial aspiration of each patient. Cultures are repeated whenever there is a change in the quality or quantity of fluid or a change in the clinical status of the patient. A clear fluid, small in amount and transient, requires no further consideration. Should the fluid persist, even though small in amount, it should be removed sufficiently often to maintain a relatively dry pleura, since even persisting small effusions may produce adhesions or other undesirable sequelae. Large effusions should always be completely aspirated and it may be desirable or necessary to aspirate more frequently than the accustomed pneumothorax refill interval.

If this program is followed, the development of massive effusions can usually be avoided. Some observers feel that fluid is beneficial and should be removed only for symptomatic relief of dyspnea. Others believe that fluid may be beneficial in cavity closure and because of its weight especially beneficial in improving an inadequate collapse. In our opinion the disadvantage of fluid such as mediastinal pressure, the development of adhesions, and often an obliterative pleuritis outweigh any possible good effect to be obtained from the presence of fluid.

We have found that adequate aspiration is proportional to the care exercised in determining the correct site by fluoroscopy. If the procedure is to be carried out with the patient in the sitting position, as the majority of them are, he is upright while under visualization and the arms held in the same position that he is to assume. He is turned to determine if the fluid is in the anterior or posterior aspect of the chest. A pencil line is made at the fluid level. He is then tilted in the direction of the contralateral lung and a point marked for the insertion of the needle below the line, toward the bottom of the fluid, opposite the space now empty because of the new fluid level.

A ¾ inch 26 gauge needle is used to make the novocaine skin wheal and a good wheal is important toward making the procedure painless. A 1½ inch 26 gauge needle may be used to infiltrate the deeper tissues if necessary but we have found that a 2 inch 18 to 20 gauge needle used for the aspiration, if slowly inserted and novocaine forced ahead of it, usually suffices. If a large amount of fluid is present it should be removed slowly and air introduced at intervals to prevent mediastinal shift by maintaining a stable pressure. A second needle inserted into the pneumothorax space and attached to a manometer may be the method of choice. We prefer to use a simple syringe for the aspiration, the method quite slow in itself, and to keep the patient comfortable by checking the pressure and replacing air through the same needle. The amount of air to be replaced and the final pressure must be individualized. While change in pressure either way may tend to prevent fluid formation it is mandatory to hold the collapse and keep the patient comfortable.

Fluid which develops in conjunction with a re-expanding lung is less prone to develop into an empyema. It is aspirated to facilitate observation of the lung, to better control its motion, and to allow for optimum functional return. Allowing a lung to re-expand is not a passive process, but requires continued observation, progressively smaller refills and control of fluid. Effusion associated with spontaneous pneumothorax requires more vigorous treatment, for it is in this type—with a break somewhere

in the continuity of the visceral pleura—that conditions are ideal for the development of empyema.

Tuberculous empyema may complicate pneumothorax at any stage of treatment. It may develop suddenly, with or without symptoms, or may slowly appear in a fluid which was previously clear. For purposes of this discussion we may consider as tuberculous empyema any cloudy fluid containing tubercle bacilli and complicating pneumothorax. In our practice approximately 5 per cent of patients receiving pneumothorax conform to this definition. Our treatment of this complication is that of clear effusions but is more active and more energetic. All turbid fluid is completely removed and the pleural space irrigated with azochloramid until this returns clear. This is repeated daily until the fluid clears or until it becomes sufficiently chronic that we feel safe in removing it at less frequent intervals. We feel that if tuberculous empyema is treated early, persistently, and adequately by aspiration and irrigation, there will be relatively few cases requiring surgical aid.

The role of surgery in the management of chest fluids is limited to empyema and in tuberculous empyema it is generally confined to the sequela. (1) Persistent tuberculous infection of the walls of an empyema may resist treatment and because of excessive scar tissue the fistulous tracts communicating with neighboring structures, such as infected bone or suppurating mediastinal lymph glands, would continue to feed the empyema unless and until the focus has been removed. These complications demand surgical intervention. (2) Empyema associated with a healed lung which fails to re-expand may need the volume of the thoracic cage decreased surgically to obliterate the space. (3) Empyemas with a mixed infection which do not respond to energetic treatment with aspiration and irrigation may necessitate either open or closed drainage. (4) Rarely a rapidly forming pure tuberculous empyema producing profound toxic symptoms may justify surgical drainage.

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TREATMENT OF LYMPHOPATHIA VENEREUM*

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Lymphopathia venereum is a venereal disease caused by a filtrable virus, and it is ordinarily transmitted by intercourse. As far as can be determined, the incubation period is between ten and thirty days. The first noticeable lesion is a small vesicle on the glans penis in the male, and on the labia or vaginal mucosa in the female. The pathological picture in the male and in the female differs widely, although in each case there are primary, secondary and tertiary lesions. In the male, as has been said, the primary lesions consist of a small vesicle on the glans penis, and these usually pass unnoticed by the patient. About fourteen days after the initial lesion puts in its appearance the inguinal glands become swollen and tender, and the patient complains of soreness, malaise, chilliness and may have a degree or two of fever. As time goes on the inguinal glands become more swollen and more tender and mat together, and the skin overlying these glands assumes a violaceous appearance. Soon there are multiple areas of softening with a breaking down of the skin and discharge of yellow pus which may continue to drain for several weeks. During the secondary stages of the disease the diagnosis may be confirmed by the Frei test, which consists of the intradermal injection of Frei antigen. The test is positive if at the end of forty-eight hours a large red wheal is present at the site of inoculation. If the patient remains in bed and simple treatment is carried out, the draining sinuses tend to clear up spontaneously in about eight weeks, and in the male there are usually no further developments, except that in a small percentage of cases three or four years later a stricture of the rectum may develop. In female patients the primary lesion may be seen on the labia or the vaginal mucosa. This is ordinarily overlooked by the patient, and is not usually seen unless a vaginal examination is done for some other reason. Occasionally there is a swelling of the inguinal lymph nodes in the female. Ordinarily the secondary phase of the disease causes a transitory illness for which no reason is apparent, and

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the illness usually remains undiagnosed. The female patient is most often seen three or four years after becoming infected, and at this time she has symptoms caused by a rectal stricture. These symptoms are those of a low partial intestinal obstruction, namely, abdominal distention, cramps, rectal discomfort and paradoxical diarrhea. The diarrhea is caused by the partial obstruction which pockets fecal material in the recto-sigmoid colon. This fecal material becomes hard and acts as an irritating substance, and hence causes diarrhea. At this time a rectal examination reveals an annular constriction with smooth walls and without ulceration. The constriction is usually from one to three inches within the anus. If the patient is not seen until later, she is usually grossly debilitated and has signs of total intestinal obstruction. The patient in this condition is usually quite sick and must be treated carefully or death will result.

The treatment of lymphopathia venereum is divided into the treatment of its early and late manifestations. During the primary and secondary stages early treatment is carried out. The first requisite is bed rest, the patient remaining in bed from four to six weeks. Warm moist compresses should be applied to the suppurating glands. The patient should be given sedatives as necessary, and the diet should be light with a large amount of fluid. Proper elimination should be maintained by the use of mild laxatives.

For several years good results have been obtained in the treatment of lymphopathia venereum, during the primary and secondary stages, by giving Frei antigen intravenously. One-tenth of 1 c.c. is given bi-weekly and sometimes the amount is increased. The Frei antigen may also be given intradermally, but it is not as efficacious as if given intravenously. Often the use of the Frei antigen causes a marked exacerbation of the patient's symptoms and if this occurs, the dose should be reduced. More recently the use of sulfanilamide in large doses has been of great benefit in the treatment of the early stages of lymphopathia venereum. Fifteen or twenty grains of sulfanilamide given every four hours for a period of two to three weeks apparently prevents secondary infection and shortens the illness. It is not yet known whether sulfanilamide will prevent rectal stricture nor what its effect is on the course of the disease. However, it is being used more and more and usually the results reported are excellent. Surgical removal of the infected inguinal glands has been used for some years. This procedure requires a general anesthesia and the glands may be removed entirely. There is a risk, however, that in the male the lymphatic drainage of the leg may be interfered with, causing elephantiasis, and in women the operation may cause obstruction of the lymphatic drainage of the labia, resulting in the condition known as esthiomene, or swelling of the labia.

The treatment of the third stage of the disease resolves itself into the treatment of the rectal stricture. About eight years ago, an opportunity presented itself to treat several patients with partial obstruction, due to rectal stricture, with the Elliott machine. The Elliott machine is ordinarily used to treat pelvic inflammatory disease, and it consists of an apparatus for heating water to a fairly high temperature and forcing it through an applicator which is applied within the vagina. In the treatment of rectal stricture a small rubber applicator, approximately the size of the little finger, is introduced into the rectum. The water is then heated to the temperature of 130 degrees Fahrenheit and is passed through the applicator, which is within the rectum, for a period of one hour. The application of heat in this manner apparently causes resolution of the fibrous tissue and the stricture tends to disappear. In addition there is relief of discomfort caused by secondary infection. Ordinary care in the application of heat through the Elliott machine must be used—that is to say, the skin of the buttocks must be protected from the applicator by gauze packs and the temperature must not go above 130 degrees Fahrenheit, and the water pressure in the applicator must not go above three pounds as shown by the indicator on the machine. While this type of therapy has not been used in a large number of cases, it has been possible to follow two cases over a period of four years and the strictures have remained the same size, and the patients have been quite comfortable. In the treatment of advanced cases of rectal stricture with general debilitation, the procedure of choice is colostomy under local or spinal anesthesia. A double barrel colostomy is performed and is, of course, a permanent colostomy. The operation is somewhat dangerous because the patients are in such poor condition at the time they are operated upon.

CONCLUSION

1. Lymphopathia venereum is a venereal disease caused by a filtrable virus.

2. Lymphopathia venereum may be divided into primary, secondary and tertiary stages.

3. In the primary and secondary stages, bed rest, sulfanilamide in large doses and Frei antigen are the best means of treatment.

4. The Elliott machine may be used to advantage in the early treatment of rectal stricture.

5. A permanent colostomy is the procedure of choice in the treatment of far advanced cases of rectal stricture.

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MULTIPLE SACCULAR ANEURYSMS OF THE AORTA WITH ROENTGEN AND NECROPSY FINDINGS*

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While it is generally known that small aneurysms of the cerebral arteries are commonly multiple, the fact that more than one aneurysm of the aorta occur is often overlooked in clinical and roentgen examitions. In 1935, we had the opportunity to thoroughly study a case of multiple saccular aneurysms roentgenologically and at necropsy. A recent review of the literature by Wilburne and Taylor[15] with report of three cases brought out certain features of interest but failed to stress the marked similarity to lymphoblastomata and other mediastinal tumors.

Lucke and Rea,[10,11] in a study of 217 cases of aortic aneurysm, found 46 cases of multiple aneurysms. Boyd,[2] in 4,000 cases of aneurysms of the thoracic aorta, and Hare and Holder[5] in 953 cases of aortic aneurysm contribute no information on the subject of multiplicity in their analyzed cases. Colt[4] found 57 cases with multiple aneurysms in 707 cases studied. Kampmeier,[6,7,8] in three separate studies reported 9 cases in 270 cases of aneurysm of the thoracic aorta, 23 multiple lesions in 633 cases of aortic aneurysm, and 6 in 73 cases in the abdominal aorta. Stengel and Wolferth,[14] in studying mycotic aneurysms, found the aorta most frequently involved with 88 aneurysms in 66 cases. In 217 cases of mycotic aneurysms in all sites, there was more than one aneurysm in 49 and they add that multiplicity is one of the most common features of mycotic aneurysms.

Syphilis was attributed to be the specific etiologic factor in the majority of the cases by Cecil,[3] while trauma was well discussed by Karsner,[9] atheroma by Ruffin, Castleman and White,[13] bacteria by Stengel and Wolferth,[14] and the occurrence of multiple aortic aneurysms in children reported by Acuna, Winocur and Orosco,[1] and Pincherle and Dalla Volta.[12]

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CASE REPORT

A single colored male, aged 26 years, a garageman by occupation, was admitted with chief com-

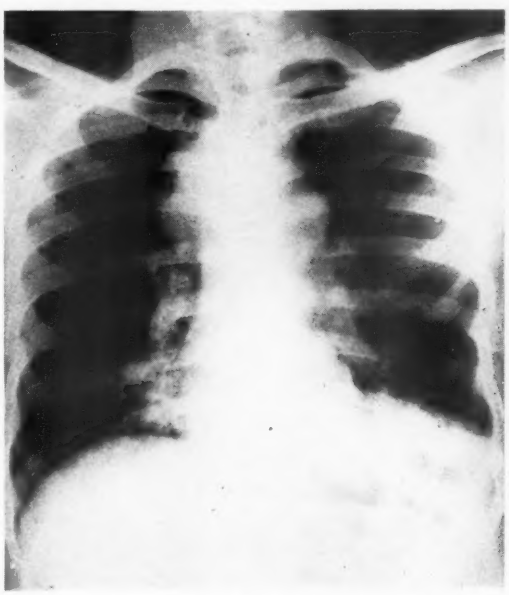

Fig. 1.—Postero-anterior film of chest showing lobulated mediastinal mass, hilar densities and lower left pleural fluid.

plaint of a bad cold with cough and pain in his left side over his lower chest. For four weeks he had been troubled with a severe, frequent, barking cough, and the expectoration of thick, clear, yellow, tenacious sputum. There had been slight eleva-

tion of temperature, headache, malaise and progressive weakness, more marked in the last week, with respiratory distress. One week before admission he had severe epistaxis, followed by a coughing spell. He had become moderately hoarse and pain in the left chest was localized, severe, and did not radiate.

There was a history of typhoid in early childhood, pneumonia, rheumatism in adolescence, gonorrhea in 1922, and syphilis in 1935, with 14 intravenous injections at St. Louis General Hospital. The mother and father were dead of unknown causes and there were no other members of the family.

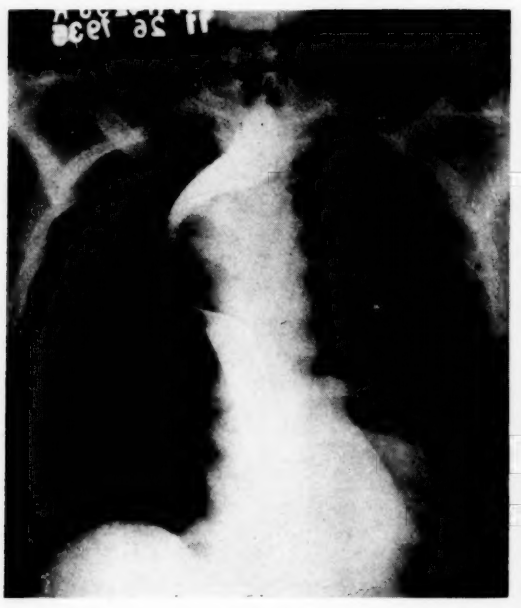

Fig. 2.—Postero-anterior film with barium in esophagus, which was displaced sharply to the right by largest of the three aneurysms.

Physical examination showed a well developed and nourished colored male propped up in bed with definite labored breathing, and frequent expectoration of mucopurulent matter.

The temperature varied from 98 to 101 degrees, respiration from 22 to 25, and pulse from 75 to 110 during his stay in the hospital.

The blood pressure was 110 systolic and 70 diastolic in the left arm, and 120 systolic and 80 diastolic in the right arm.

A thorough examination revealed the following positive findings: general periodontal disease, slight bilateral cervical and submaxillary lymphadenopathy with small, firm, freely movable nodes, more numerous on the left, exaggerated breath sounds over both lungs with labored breathing and expiratory grunt, bronchovesicular in type. There was bilateral dullness from 3rd to 8th dorsal vertebrae posteriorly, 8 cm. wide, with slight dullness at both bases posteriorly without rales, widening of aortic arch on percussion anteriorly with dulness 5 cm. to right and left of mediastinum over 2nd intercostal space, and clubbing of fingers.

The essentially negative findings were: scalp, eyes, ears, nose and throat, no abnormal rate, rhythm, pulsations or enlargements of heart; no tracheal tugs, no abnormal reflexes, and no adenopathies except in the cervical region.

Fig. 3.—Lateral film with barium in the esophagus, which is flattened and displaced to right. Multiple masses in region of aortic arch.

Two blood Wassermann tests were made and both were reported four plus. Three blood studies gave an average hemoglobin of 80 per cent, red blood cells 3,900,000, white blood cells 17,500, polymorphonuclear leucocytes 82 per cent, and lymphocytes 18 per cent. Urine examinations were negative. The sputum was negative. The blood sugar was 75 and non-protein nitrogen 26.

ROENTGEN FINDINGS

Postero-anterior and left lateral views of the chest showed a somewhat irregularly lobulated mass in the mediastinum extending to both sides about equally and pressing the trachea forward and to the right.

The heart was not enlarged and was somewhat ptotic in type. There was marked prominence of the lower hilum and trunk shadows.

There was a small amount of fluid in the left lower chest above the dome of the diaphragm and at the left costo-phrenic angle. The left dome of the diaphragm was a little higher than the right and there was gas in the stomach and colon underneath it.

Fluoroscopy showed a lobulated mass in the mediastinum with a slight transmitted pulsation and fluid at the left base. The trachea deviated to the right.

All the findings suggested a lymphoblastoma with small left pleural effusion.

Roentgen therapy was administered to the mediastinum as a diagnostic test. In five days, 1,000 r was given in divided dosage.

Teleroentgenograms, fluoroscopy and esophagograms 3, 10 and 17 days after roentgen therapy showed no appreciable change in the size or appearance of the mediastinum. There were curved convex densities extending to the right and left, forming an enlarged mediastinal shadow. The esophagus curved sharply to the right and was flattened by pressure. The trachea was displaced forward. A mass which measured 11 cm. in width and 8.5 cm. in depth, anterior to the vertebral bodies, and 2.5 cm. posterior to the sternum, lying between the third and sixth ribs posteriorly, was seen. No expansile pulsation was noted to suggest any typical finding of aneurysm on repeated fluoroscopy, and we added, "but of course an aneurysm would still have to be considered".

Actually the presence of a lobulated mediastinal mass with pleural effusion in a young man without demonstrable expansile pulsation forced us to favor a malignant lymphoma even in the presence of a positive blood Wassermann and lack of response to roentgen therapeutic test. Death was attributed to mucopurulent material obstructing the air passages.

NECROPSY FINDINGS

The right pleural cavity contained a half liter of clear, straw colored, slightly sanguinolent fluid. The pericardial sac was intact and contained a normal amount of straw colored clear fluid. The left pleural cavity contained very little somewhat turbid, yellowish fluid which contained some threads of fibrin.

In the heart, the epicardium, endocardium and valvular apparatus were grossly unremarkable. The myocardium was slightly flabby; it was dark red in color on cut surface and the left ventricle was slightly dilated with apex rounded and the papillary muscles were not flattened. The size and shape of other ventricles and auricles was normal. The aortic cusps were intact. The coronary arteries were patent throughout and showed very slight atheromatous changes.

The first part of the aorta, up to about 7 cm. from the aortic orifice, was perfectly elastic and did not show any wrinkling, but revealed only a few small plaques of lipoid deposit in the intima. Close examination showed that the distended aorta was composed of three different saccular aneurysms in the arch 1, 3.5 and 10 cm. in diameter. The smaller, the size of a cherry, bulged out anteriorly to the left. The second, somewhat horn-shaped, bulged to the right and posteriorly; it had an orifice one cm. in diameter and was 3.5 cm. long. Close to this the third round aneurysm 10 cm. in diameter extended towards the right, pushing the trachea and esophagus to the right and extending with a recessed protrusion between the trachea and esophagus. When dissecting the esophagus from the tip of the aneurysm, it was found that practically no wall was left and that, at this point, the aneurysm was covered by a soft adventitial tissue of the esophagus. All three aneurysms contained only very little blood clot. The inside of the two small aneurysms, as well as a small area of the descending part of the arch of the aorta showed a wrinkled appearance. Numerous scars were present in all directions in a whitish gray colored intima. The inside of the large aneurysm, however, showed a rough surface, covered with a thin layer of reddish yellow colored friable thrombotic masses. The furrowed appearance of the inside of the aorta was sharply demarcated, a few centimeters beyond the area of aneurysms, against the descending part of the aorta, which itself was smooth and showed only a few arteriosclerotic plaques. The wall of the descending part of the aorta was elastic. No changes were noted in the large branches of the

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aorta. The microscopic diagnosis was syphilitic aortitis.

The left lower lobe and lower part of the left upper lobe showed confluent bronchopneumonia, with suppuration abscess formation and small areas of bronchiectasis. The right middle lobe showed old tuberculosis with atelectasis of the right lung and bilateral pleura effusion. Microscopically, there was old and active tuberculosis and suppurative bronchopneumonia.

There were enlarged hilar lymph nodes which under the microscope showed tuberculosis and anthracosis. Autopsy by Dr. Lechausse.

DISCUSSION

A brief survey of the literature reveals a relative infrequency of multiple aneurysms of the aorta with only isolated case reports and no comprehensive reviews or studies of cases until the paper by Wilburne and Taylor[15] who have added three cases of their own, two with necropsy studies, and all with roentgen findings.

The young age of the patient in our own case was counted as a point against aneurysm, but we note that multiple aneurysms of the aorta have been reported in a six year old girl,[1] and a seven year old boy,[12] both cases attributed to syphilis.

The presence of tuberculous and anthracotic hilar lymph nodes merged with aneurysmal masses of varying sizes further complicated our case.

Suppurative bronchopneumonia, atelectasis and bilateral pleural effusion added densities frequently seen in the lymphoblastomas, especially in young adults.

The fluoroscopic differentiation of expansile from transmitted pulsation is often impossible, especially when clots are present within and inflammatory processes are present outside and about the vessel under study.

Roentgen therapy applied to mediastinal masses can serve as a valuable diagnostic test as the majority of mediastinal tumors are radiosensitive. However, it is of greater value when there is a positive response than when negative as in this case.

SUMMARY

A case of multiple saccular aneurysms, occurring in a young negro man with a positive blood Wassermann, is reported with clinical, roentgen and necropsy findings. The literature on multiple saccular aneurysms has been briefly reviewed. Sir William Osler's dictum that there is no disease more conducive to clinical humility than aneurysm of the aorta, appears to be confirmed. We might substitute "roentgen humility" for "clinical humility" and place the word "multiple" in front of aneurysm.

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Medical College of Virginia Hospital.

TREATMENT AND ANALYSIS OF 350 CONSECUTIVE CASES OF ACUTE APPENDICITIS

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The purpose of this presentation is threefold. First, to present 350 consecutive carefully analyzed cases covering a five and one-half year period from July, 1937, to January, 1942, treated at this hospital.

Second, to compare our cases and treatment with that of other hospitals in order to arrive at a conclusion in regard to our methods and results of treatment in view of the apparent trends (according to statistics) toward an increase in the mortality of appendicitis. Jackson and Perkins,[1] Morse and Rader,[2] and others have shown that the mortality rate in appendicitis seems to be increasing rather than decreasing, this being particularly true in the perforated cases in which the highest mortality occurs. The mortality rates in cases of perforated appendicitis vary from 10 per cent[3] to 31 per cent[4] or more, while the non-ruptured cases vary from zero per cent[3] to 5 and three-tenths per cent[5] or more in the literature.

Finally, the analyses were made as a matter of personal interest and are a contribution of a number of well considered cases toward the common problem involved.

In selecting our cases, an attempt was made to rule out all except acute cases. For this purpose, careful records of the operative findings, particularly in regard to the presence of fecaliths, and careful pathological examinations were made in every case. Most of our cases showed definite pathological changes. A few cases showing little or no pathological change, but in which multiple fecaliths or constrictions were present, were included on the basis of the work of Wangensteen,[6] Dennis and Buirge,[7] and were placed under the head of mechanical appendicitis.

TABLE I

ETIOLOGY—350 CASES

	NUMBER	PERCENTAGE
Inflammatory	252	73.9
Gangrenous	69	19.7
Mechanical	26	7.4
Ruptured	31	8.8
Non-ruptured	302	86.4
Abscess	17	4.8

The scope of this paper does not attempt to include detailed symptomatology, blood counts, etc. However, on the basis of experience, it was felt that one symptom or physical finding should be emphasized—that of persistent, localized tenderness. For purposes of comparison, this finding was analyzed along with that of the often-quoted finding of rigidity.

TABLE II

TENDERNESS			RIGIDITY		
	NUMBER	PERCENTAGE		NUMBER	PERCENTAGE
None	4	1.1	None	116	33.1
Slight	79	22.5	Slight	171	48.9
Moderate	138	39.4	Marked	63	18.0
Marked	128	37.0			

In 139 cases with slight rigidity, there was moderate or marked tenderness. In the remaining 32 cases showing slight rigidity, there was slight tenderness. In every case with marked rigidity, marked tenderness was present.

The duration of the patient's symptoms before operation was determined on the basis of the patient's history and was in most cases quite clear cut. This time interval was determined separately and without relation to treatment, but, as will be shown, had a very interesting relationship to our form of treatment.

TABLE III

DURATION OF SYMPTOMS PRIOR TO OPERATION

Average	2.76 days
Non-ruptured (307)	2.66 days
Ruptured (31)	3.80 days

In our method of handling these cases, we have attempted to come to a compromise between the delayed treatment (so-called Ochsner method) and the method of immediate surgical removal[8] in all cases. It is true that in most of our cases immediate surgery with removal of the appendix was done (see Table IV), but we do attempt to judge a little more closely any case with acute symptoms of three days or over, and it was in this group in most instances that our delayed treatment was carried out. It is obvious to the experienced individual that perforation may occur prior to or after this arbitrary period,

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but it is our feeling that by keeping this period in mind, these cases may be selected out of the group. This corresponds to the feeling of Haggard and Kirtley,[9] Barrow and Ochsner,[5] Gardner,[10] Jackson and Perkins,[1] and many others. This arbitrary three-day period closely correlates with the cases presented here in which the non-ruptured cases averaged 2.66 days and the ruptured cases, 3.80 days.

TABLE IV

TREATMENT	No.	PERCENTAGE
Immediate surgery and removal of appendix	335	95.8
Delayed surgery and removal of appendix	11	3.1
Delayed surgery without removal of appendix	4	1.1

Cases seen at the three-day interval are carefully examined, making use of all laboratory and other aids available. If there is still some doubt in regard to the evidence of rupture, operation is performed, as it is shown so definitely that the removal of an appendix that has not yet ruptured is much less dangerous than the removal in the case of perforation or abscess formation (see Table VI). It is felt, however, that it is wrong to operate immediately on a patient showing definite evidence of acute rupture or acute abscess formation. The only exception to this might possibly be a case with a fulminating general peritonitis[11] without any evidence of localization after a period of watchful waiting. Such a situation is extremely serious with or without operation.

There were seventeen cases of appendiceal abscess in this series. These were treated conservatively with delayed operation. In six, or 35.3 per cent of the cases, removal of the appendix and drainage was instituted, and in eleven cases, drainage without removal was done at operation.

An analysis of the cases drained follows:

TABLE V

DRAINAGE

TYPE OF CASE	NUMBER	PERCENTAGE OF DRAINED CASES
Abscess	17	45.4
Ruptured with abscess	11	27.6
Non-ruptured	10	27.0

Total—38, or 10% of the series.

With the present use of the sulfonamide group of drugs,[12] a non-ruptured case is rarely drained, and in a few instances we have closed, without drainage, cases of perforation, so that the latter group in Table V is now practically non-existent.

TABLE VI

MORTALITY

Acute appendicitis without rupture	0%
Acute appendicitis with rupture:	
31 cases with 5 deaths	16.1%
Total mortality for series (350 cases)	1.4%

The fatalities in this series of cases are shown above and number five cases in all. One of these cases showed general peritonitis, pelvic and subphrenic abscess, and intestinal obstruction. This case had symptoms of three days' duration; there was a gangrenous, ruptured appendix without abscess formation which was removed by immediate surgery, drainage being instituted. The second case was of seven days' duration. There was a gangrenous ruptured appendix without abscess formation which was removed by immediate surgery with drainage. General peritonitis and pelvic abscess developed. The third case developed a sub-phrenic abscess following simple drainage of an abscess without removal of the appendix, in a case of nine days' duration. Of the two remaining cases, one was a gangrenous ruptured appendix without abscess formation which developed a fatal pneumonia; the other was an elderly man with a recurrent acute appendicitis with rupture and local abscess formation, who developed cardiac decompensation followed by wound disruption and local peritonitis.

In this series are included five cases of recurrent acute appendicitis[13] in which the primary treatment was simple drainage. In each instance the patient had waited too long before returning for appendectomy, and an acute flare-up had occurred. Our patients are advised to return for appendectomy between six and eight weeks following a simple drainage of an appendiceal abscess. The early removal of the appendix following drainage avoids acute flare-ups and is without reaction on the part of the patient, the peritoneum apparently having been vaccinated at the previous time of rupture.

SUMMARY

1. The pathological changes in acute appendicitis have been divided into inflammatory, gangrenous and mechanical phases for purposes of this paper.

2. Persistent, localized tenderness is emphasized as an important criterion in diagnosis.

3. Immediate *versus* delayed treatment has been considered, and a compromise on the basis of a three-day suggestive and purely arbitrative period is present.

4. Statistics in regard to etiology, symptomatology, treatment, drainage, and mortality are present.

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CLINICAL ASPECTS IN THE TREATMENT OF SYPHILIS*

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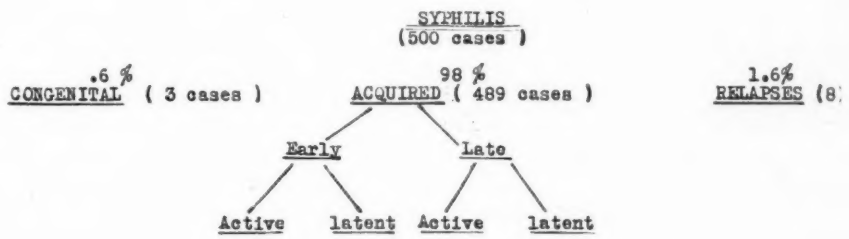
With the hope that we might get a better idea of how syphilis presents itself here in our own community and that some of the vitally important points in handling a luetic case under treatment might be re-emphasized, it is our desire to analyze a series of 500 cases now under treatment in the Medical College of Virginia syphilis clinic.



Here we have all our cases divided into three classes:

I. By the congenital class, we mean those cases which are born with the syphilitic infection. It may be active at the time or latent to become active later in life. As we can see, less than 1 per cent of our cases were in the congenital class. This is hardly a true picture, because we only treat adults (from 12 years and older) and these three happened to be cases that had either graduated from the child luetic clinic or their congenital manifestations did not develop until they passed into our adult age group.

Since this group appears relatively insignificant in this series, I would like to stress one point and pass on to the next group. It is often mistakenly

*Read before the Richmond Academy of Medicine, October 13, 1942.

understood that hereditary syphilis must manifest itself at birth. Recently, one of our patients who was reporting for syphilis treatment brought his eight year old boy along with him. His son had an eye in which the vision was getting dimmer and dimmer despite the limited procedures at his mother's disposal. On inspection it gave a characteristic ground glass picture of interstitial keratitis. After eye consultation and a positive Wassermann test, in the absence of any personal luetic infection of the boy, it had to be regarded as a late manifestation of congenital syphilis.

The point to be stressed, then, is this: All children of luetic parents (either one or both) should have serologic tests done early in life. It may be late in childhood or in early adulthood before the disease manifests itself. If the child is treated early for his positive serology, odds would be much against the disease ever manifesting itself clinically.

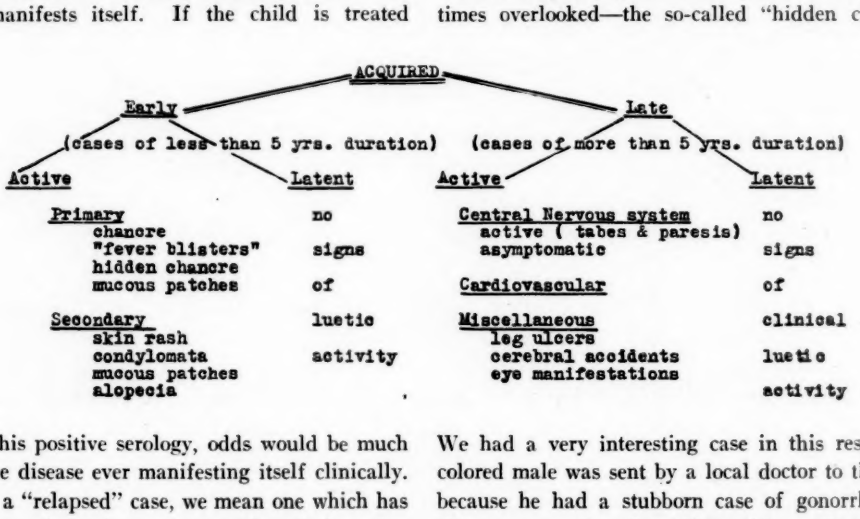
II. By a "relapsed" case, we mean one which has a recurrence of a primary or secondary lesion after these early lesions have once healed. This usually happens to a patient who has had the disease less than four years and who has never had a reversal of blood serology and who has taken very irregular or inadequate treatment. Of our eight cases which relapsed, five were recurrent skin rashes and three were recurrent chancres. Since this group occupied only 1.6 per cent we will not dwell on it at length—only long enough to emphasize that it is a very discouraging complication both to the doctor as well as the patient. It can practically always be avoided by adequate systematic treatment.

Since 98 per cent of our cases deal with the "acquired" variety, we will spend the rest of our time in this field. For purposes of treatment we divide all "acquired" cases into one or two groups, either early or late.

III. The early cases are generally referred to as cases of less than five years duration.

Our primary lesions were no respector of age or locality. The majority of these lesions were chancres and, in every case but one, were penile in the male and about the vulva and intravaginally in the female. One of our recent cases was a deaf and dumb 22 year old colored boy who had a chancre about a relaxed and ragged anus. Another one of this series reported at the youthful age of 12 with a typical penile chancre. We even have in this series a 65 year old colored man who recently began his luetic experience with a penile chancre.

Another primary lesion can be and has been at times overlooked—the so-called "hidden chancre".



We had a very interesting case in this respect. A colored male was sent by a local doctor to the clinic because he had a stubborn case of gonorrhea that did not respond to the sulfonamides. He had been treated every four hours for six weeks with this medication and the discharge was as profuse as the first day of his disease. He was misguided to the syphilis clinic instead of the urological clinic. While he was in the D & S clinic someone examined him and found that beneath a tight phimosis there was a hard indurated, well circumscribed area on the glans penis. He had, in addition to this lesion of the penis, hard shotty painless lymphadenopathy in the right groin which must have been due to a "hidden chancre" on the penis. There was still a profuse urethral discharge from which smears were taken and diagnosed gonorrheal. A stat serological test was positive. He was immediately put on early active treatment for syphilis and continued his same

gonorrheal treatment under his family physician's care. Within five days the discharge had cleared up entirely. Two weeks later the "hidden chancre" could not be felt. We are not advocating the syphilis treatment for gonorrhea, but there did seem to be some synergistic action that facilitated a cure for his gonorrhea when he received his much needed syphilis treatment.

In the rare case there is the luetic "fever blister" with regional hard shotty lymph nodes in the submandibular regions. In the female, mucous patches are often found in the vagina and about the cervix. Since these lesions are always on moist mucous surfaces, it follows that we should see them frequently in the mouth and about the fauces and soft palate.

The secondary lesions in this series consisted of various skin eruptions, condylomata, mucous patches and, in one case, severe alopecia.

The early latent cases are those of less than five years duration with no clinical evidence of syphilis.

As for the treatment in these early stages, suffice it to say that it is as intense as we dare to give it. It is often said that in early syphilis it is the syphilis that we treat, while in the late cases we treat the patient. Early syphilis might be likened to a small fire starting in a furniture store. The firemen rush in, without much regard for damage to the store and its contents to control the fire almost at any cost. We are not that disregardful of the patient's welfare in early syphilis, but we do realize that now is our chance for cure and we should push our drugs to any limit that is compatible with the safety of the patient. For the first few weeks particularly do we "bear down" on the patient. After one or two strong arsenic treatments the organisms are believed to be killed, thus eliminating a public health hazard, as well as benefiting the patient.

Duration of the treatment: In the early primary or secondary lesions we have been treating on an average of twelve months. If the cases are not detected until they have gotten into the dormant or latent period of early syphilis, we are not satisfied with less than eighteen months of treatment.

LATE SYPHILIS

These are cases of more than five years duration. As in early syphilis, this group is divided into its active and dormant, or latent, divisions. Our cases of active syphilis in this late group fall mainly into three groups:

Central Nervous System Lues: Here the spirochete has invaded the vital nerve tree and manifests itself usually as tabes, paresis, tabo-paresis and meningo-vascular syphilis. There is also the asymptomatic group of c.n.s. lues, which is characterized by spinal fluid changes with no clinical symptoms of c.n.s. involvement.

Cardio-Vascular Lues: It is important to know if your patient has this in order that you don't kill him with arsenic. I have seen two cases in a general hospital where this was done. It can happen in your office just as easily. In both cases the patient had well described "to and fro" aortic murmurs written up on the chart and in both cases the tragedy followed the first heavy dose of neo-arsphenamine. Therefore, it is never advisable to give arsenic to cardio-vascular luetics unless it is given with the greatest of caution, and even then in selected cases with very small doses. Our policy is never to use it in elderly patients with luetic aortitis.

Another unusual complication, two of which we have in this series, is thrombosis of the posterior inferior cerebellar artery. Both occurred in rather young men—one 36, and the other 29. The symptoms and signs were of rather gradual onset, culminating over a period of 10-18 hours. Both of these cases involved the left side of the face and the entire right side of the body. There was an anesthesia of the skin and partial motor paralysis. There were definite signs of cerebellar incoordination and other localizing signs which made the diagnosis of thrombosis of the posterior inferior cerebellar artery as definite as it was interesting.

The Miscellaneous or Benign Group—Sometimes Called the Allergic Manifestations of Syphilis: Our leg ulcers and eye complications belong to this group. There are others, such as arthropathies, bone lesions, gummas of tendons, muscles and viscera which also fall into this category. One of the most interesting things about this group, as Moore points out, is that it enjoys an apparent immunity to c.n.s. involvement.

Acquired Late Latent Syphilis: This is the diagnosis in those cases of more than five years duration which have no signs of luetic activity. Before we place a case in this classification we must use every means at our disposal, including spinal puncture, to determine that the syphilis is quiescent. I am certain that we are treating cases in our syphilis clinic, as well as in our private practices, of central

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nervous system syphilis as harmless late latent cases because a spinal puncture has not been done. I base this on the following statistics:

Statistics: In this particular series of 500 cases now under treatment, 45 spinal punctures have been done. Only four of these gave clinical suspicions of c.n.s. lues beforehand, yet the following results were obtained:

(1) Fifteen showed *positive* Wassermann—(a) Seven showed *positive* Wassermann only. (b) Eight showed signs of c.n.s. luetic activity (cells, protein, mastic, as well as Wassermann). Only half of these (4) demonstrated physical findings of c.n.s. lues.

The spinal puncture is a very important factor in determining the treatment of syphilis. There are many cases which are regarded as late latent cases, which, after spinal puncture, are definitely demonstrated to be active central nervous system syphilis. Our indications for spinal punctures are as follows:

Indicated:

(1) always before a case is discharged from treatment.

(2) in all late cases (more than 5 years duration) on admission.

(3) specific indications suggestive of c.n.s. disturbances.

SUMMARY

A series of 500 cases treated for syphilis at the Medical College of Virginia clinic is presented and the following points are emphasized:

(1) All children of luetic parents should have Wassermann tests early in life and be submitted to treatment before clinical signs develop.

(2) Vigorous and regular early treatment should be insisted upon in order to make more certain chances of cure and less certain the possibility of "relapse".

(3) In treatment of the "late" cases particularly, an evaluation should be made of the patient's cardiovascular status to be certain that he does not have luetic involvement, in which case all arsenicals should be contra-indicated or used with the greatest care.

(4) It was pointed out that no case should be discharged from treatment without spinal puncture. Indications for spinal puncture in this clinic are listed.

210 Medical Arts Building.

RECENT TRENDS AND CURRENT ATTITUDES IN ORTHOPEDICS*

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Occasionally it is helpful to stop and analyze one's opinions on his subject—to crystallize the ideas he has collected in the back of his head, by putting them into words.

During the past three years I have had the opportunity to work and study in the limited field of orthopedics; this has made it possible for me to familiarize myself with the literature, recent trends of thought, investigation and technique in this field, and so tonight pass on to you my personal impression of the current attitudes prevalent among orthopedists. Perhaps some of them may prove of value or, at least, interest, to you.

I shall not attempt to discuss fractures, although there is still a definitely changing attitude toward many types of fractures, as exemplified by the general acceptance of Caldwell's hanging cast for most fractures of the humerus, and the trend toward open reductions for many ankle fractures and fractures of the calcaneous. In passing, I would like to recommend local anesthesia for broken ribs in elderly individuals.

The value of the sulfonamides, of internal fixations, and of plaster encasement for compound fractures will be determined after this war is over and the final analysis completed. Already, it is apparent that *nothing* takes the place of early, careful and thorough debridement of all compound fractures. Local applications of a sulfonamide cannot protect devitalized tissue—figures from England have already proved this.

Just as it must be a long time after this war before the final analysis can be made on compound fractures, so it has taken twenty years since World

*Presented at the January, 1943, meeting of the Northampton County Medical Society.

War I, to properly evaluate the results of amputations in that War. Last spring, Dr. Gallie, Canadian surgeon directing the care of disabled veterans, made several rather definite and important statements. He has concluded, after observing many types of amputations under varying conditions of use, that a properly performed Gritti-Stokes amputation (remember this is above the knee) provides a more satisfactory limb in the long run, than any other amputation of the leg with the possible exception of a well done Symés. This gives anyone who is planning or ever expects to do an amputation through the upper tibia, something to think about.

So much for amputations! What's new in arthritis? I wish I could pass on to you a startling advancement in the treatment of arthritis. I am sorry, but I know of none. It may be worthwhile to review this whole subject, though, for I know you all have the same problem to face again and again. What can I honestly offer the arthritic?

First of all, with what kind of arthritis are we dealing? Is it specific, atrophic, hypertrophic, or traumatic? And don't forget gout! From the Mayo Clinic comes more and more evidence that we may be missing a good many cases of border-line or atypical gout. The first step in diagnosis is to think of it. The true test is a response on the part of the patient to dietary adjustments and perhaps neocinchophen.

Of the specific arthritides, by far the most common is gonorrheal. The dramatic response of *gonorrheal urethritis* to the sulfonamides is all fine and good—but that isn't the end of the story. We are still seeing joint complications, though they do seem less frequent and less severe than before the advent of sulfanilamide. The most important principles in the treatment of these complications are as true as they ever were. Put the joint at rest, and prevent deformities.

Given a case of acute gonorrheal arthritis of the knee, the patient should certainly be kept in bed. Apply traction if necessary to overcome painful spasm. Aspirate as frequently as effusion recurs. Remember that the presence of polymorphonuclear cells in a joint spells permanent injury, for the proteolytic enzyme of the polys *dissolves* hyaline cartilage. If the cartilage is already destroyed, immobilize the joint in a functional position until ankylosis has occurred. A wrist stiff in flexion is useless—one in extension is surprisingly efficient. The acute joints subside rapidly when the blood stream is saturated with a sulfonamide. Chronic joints respond best to fever therapy.

Atrophic arthritis is a more discouraging subject. The two previously mentioned fundamentals apply just as definitely here—put the joint at rest and avoid deformities. But in all fairness, I'll add the condition "whenever this is possible".

During the past year there has been in a few isolated investigation centers a shift of attention in the field of arthritis. Previously workers have attempted to establish an infectious element in the etiology of arthritis, yet only three conclusions have been justified: (1) Foci of infection have an unfavorable effect on atrophic arthritis. (2) The streptococcus is probably associated either directly or indirectly with all forms of atrophic arthritis—be it Still's disease, Marie-Strumpell spondylitis or the more familiar arthritis deformans which so commonly cripples the extremities of a previously vigorous young adult. (3) The third point of agreement is that there is still an undetermined factor, probably systemic rather than local, which is common to all cases of the atrophic variety.

It is this undetermined factor which must hold the key to the mysteries of arthritis. I cannot resist the temptation to talk a little about this undetermined factor, even though such a discussion is surely premature.

Recently Miller and DeTakas published a report on their study of the role of the sympathetic nervous system in post-traumatic osteoporosis (often called Sudeck's atrophy). They pointed out the similarity between certain elements of atrophic arthritis and of Sudeck's atrophy, especially the chronic hyperemia and edema of the joint capsules, the loss of calcium from the bone, the severe pain and spasm, and certain changes in the skin texture common to both disorders. It has been proven clinically that a disturbance in the sympathetic nervous system is the cause of the circulatory disturbances (which, in turn, seem to be responsible for the pain) in the case of the post-traumatic disorders. Perhaps the same may be true in atrophic arthritis; even though the precipitating factors are admittedly different. This is a field which deserves further investigation.

But to come back to earth—what can we do for

the unhappy arthritic today? Systemic measures are of major importance—and among these I mean a healthy diet. It is granted too much protein and starch are undesirable, yet the patient must be well nourished. An adequate vitamin complement is most valuable (and apparently this means much larger dosages than those required by the normal individual).

X-ray therapy has by now unquestionably proved its value in the treatment of early cases of Marie-Strumpell spondylitis but even here it is not sure-fire. I am sorry to say that its results do not justify the application of x-ray to other forms of arthritis.

But let us not forget the basic pathology in the joints. As an orthopedist I should be limiting my discussion to this aspect of the disease, anyway, and leave the systemic treatment to the internist—for it most surely is a medical problem. Since the synovia are proliferating, forming villae and tabs which spread across the articular surface to erode the cartilage and leave narrowed joint spaces which usually ankylose, the treatment is self evident. Put the joint at rest. Prevent deformities.

The individual case must dictate the special measures required to accomplish this. A wide variety of splints are available, but for real immobilization to insure absolute rest and ankylosis in an optimum position, nothing can take the place of a plaster or celluloid cast.

Hypertrophic Arthritis. Again I have nothing dramatic, but will briefly review the pathology and a few principles of treatment, as I did for the atrophic variety. This disease, also called degenerative arthritis, occurs in elderly people and usually first affects those joints which have carried the heavier loads. Fibrillation of the cartilage, bone hypertrophy and spur formation occur, but the end result is an eburnation of the joint surfaces without ankylosis. So, with the outlook that all this implies, I try to impress these patients with the fact that their relief must come from a combination of things—not a magic cure.

It is obvious that the obese individuals complaining of hip, knee, or ankle should reduce the load by dietary measures. By the same token they must learn to plan their activity in terms of saving (or perhaps rationing is a better word today)—thus rationing the usefulness left in the joint. The housewife must avoid climbing up and down stairs, and the husband who has lived by the strength of his back must now get someone younger to chop wood and carry out ashes.

Foci of infection, good dietary habits, proper care of the bowels, and a happy environment must all be considered in treating the elderly arthritic, but as far as I know nothing can take the place of salicylates. There are many people who are able to go back to work today, when the younger men are needed for more vigorous duty, because they have made friends with aspirin. I see no more reason for an arthritic not taking aspirin regularly, than for a cardiac not taking his digitalis.

Mechanical measures which also help are heat and, as with the atrophic variety, immobilization. Heat seems to help a joint most when applied as a moist compress, though I realize this is the most inconvenient and troublesome method. Measures for immobilizing hypertrophic joints need not be as vigorous as for an atrophic one. Night splints often do wonders. On the other hand, there are a few hips which respond only if put at complete rest in a spica—and believe me this is sometimes justifiable.

Surgery may seem like radical treatment for hypertrophic arthritis, but there are just a certain number for whom this is worth while. Two procedures most often indicated are patellectomy for localized changes of the patella, and synovectomy of the knee when exploration reveals a marked synovial proliferation with relatively little break-down of the articular surfaces themselves. For years now, McMurray has championed a high osteotomy at the hip to re-align the thrust and weight-bearing in that joint. He claims to have added at least ten years of productive activity to many patients with disabling hypertrophic arthritis in the hip.

One more of the group of arthritides, and we'll talk about something else. *Traumatic arthritis* is closely related to the hypertrophic, degenerative, or so-called osteo-arthritis. It is more of a mechanical and less of a systemic disease, however. Usually traumatic arthritis occurs in a single joint which has been subjected to some particular insult—the strain of mal-alignment or the cumulative injury of some repeated trauma. The basic treatment is obvious—re-align the joint by balancing shoes, correcting posture, supporting the abdomen, back, etc. If possible eliminate the trauma. Additional treatment follows the same lines as mentioned for hypertrophic

arthritis—heat, rest, salicylates, support.

As far as I know, there has been no new contribution to the subject of *birth injuries*. The upper-arm or Erb-Duchenne type, that most frequently seen by us all, is still a disabling deformity if left untreated, but with proper care can be limited to a mild paralysis. Accepted, that various cases of Erb's paralysis differ as to the degree, the disability is proportional to the severity of the contracture. Prevent the contractures, and the severe deformities are eliminated. Splints have been devised to maintain the arm in the correct position—abduction with external rotation for most cases. The same purpose can be accomplished by physio-therapy—that is, passive stretching—and when properly supervised, this is a very satisfactory method of treatment. The case which has been kept free, that is, without severe contractures, is by far the most favorable for later surgery. Such procedures as the Tubby transplant of the pronator teres can then restore exceptionally good function.

Next on my list I have *tumors*. This subject of bone tumors should not be passed over superficially. In all fairness, I should either leave it out or spend the whole time on it. But I cannot resist making a few remarks which have particularly impressed me with their importance. Many surgeons feel that the orthopedist is not qualified to treat bone tumors. The orthopedist feels that he alone is familiar with bone physiology and pathology. As far as I personally am concerned, no one is capable of taking responsibility for the treatment of bone tumors who has not made a complete study of the subject and has kept up with the changing viewpoints of all groups—including the Bone Sarcoma Registry of the American College of Surgeons. Whether the surgeon is a general surgeon or an orthopedist is far less important than the abilities and experience of the individual.

There are two statements I would like to make concerning the subject of bone tumors: (1) Avoid combining radiation and surgery in the treatment of a giant cell tumor of bone. Codman advised against this years ago, and the Registry shows that a higher percentage of giant cell tumors become aggressive, or even malignant, when subjected to combined treatment, than when treated by either surgery alone or radiation alone. Choose your method of treatment at the beginning—and stick to it! (2) The second statement which seems of significance to me, was made by Ferguson two years ago. His analysis of results registered for osteogenic sarcomas justifies a rather astounding conclusion. Cases of bone sarcoma which are amputated early have the greatest mortality! This certainly is contrary to what one would expect, for we teach that, in general, the earlier a tumor is attacked the better are the chances of survival. I have not time now to give you Ferguson's explanation of the apparent paradox. The plan of treatment he advises is to use radiation on the tumor until it has reached one of its relatively regressive periods in the ordinary cycle of exacerbations and remissions. This subject is being further investigated.

What's new in *osteomyelitis?* Sulfonamides, of course! What have they done? They have been responsible for the first series of cases of acute osteomyelitis which can honestly be called favorable. Up until August, 1941, the only statement which could be definitely made about the reports on acute osteomyelitis was that the prognosis was bad, as one reviewer put it. Since then, Hoyt and his group have been adding more and more cases—all with about this same history: Typical case of acute osteo in the early stage. Positive blood cultures. No x-ray changes as yet. Sub-periosteal abscess aspirated with growth of staphylococcus aureus. Patient started on full doses of sulfathiazole, plus supportive treatment for a septicemia, transfusions, adequate fluid turnover and enriched diet. Immobilization of painful member, sedation if needed. No surgery, but conservative treatment continued for two weeks after temperature subsided—this meant six weeks or more of sulfathiazole in most cases. What happened? There were no deaths, and the last I heard a group of some twenty-five successive cases had been observed. The blood culture became negative; later, aspirations of the abscesses yielded *sterile* pus. X-rays showed less destruction of bone, but the most amazing part was the report of sequestrae being observed to separate and then to re-vascularize.

I can do no more than pass this information on to you, as I have received it. I can assure you, as soon as I am in a position to do so and have an early acute osteo to treat in a child, I shall try this regimé!

The sulfonamides have also given us a more op-

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timistic outlook for the case of chronic osteomyelitis. I know from personal experience that about half the chronic cases can be saucerized and closed primarily if sulfathiazole (or, better yet, a mixture of sulfanilamide and sulfadiazine) is used locally and systematically. What the end results will be, I do not know as yet, but, when carried out at the proper stage of the disease, primary closure can be done in most cases.

Next on my list is the subject of *hallux valgus*. Everyone treating this deformity has settled down, I'm sure, to one or two favorite operations. I have no quarrel with anyone's procedures, but would like to turn this observation over to you for whatever you may think it worth. The Keller operation, that is, resection of part of the phalanx to produce a pseudoarthrosis in place of an arthritic joint, is an operation that makes the patient happy. Originally we limited its use to the elderly cases, but I have come to the conclusion that, even for younger people, when there is no x-ray evidence of arthritic changes in the inter-phalangeal joint, the Keller operation is not only justified but is the procedure of choice.

For *club feet*—Kyte has answered any questions as to the best treatment. He has increased his incidence of good results, using wedging plasters alone, to something better than 90 per cent. Recently Coutts published a modification of Kyte's method which I can heartily endorse on the basis of personal experience. This technique includes the use of elastic adhesive bandage applied directly to the skin, over which is rolled a short cast. The better cast, made possible by the elastic bandage, allows easier and more effective wedging.

Speaking of *feet*, is there anything new for the care of those painful adult feet we all know so well? I doubt if there is anything worth while which was not appreciated long ago by Hoke. I refer you to him. Remember the importance of peroneal spasm, and its significance. Your choice of rigid *versus* elastic support must be made by you, but I believe each has its place. In my own mind one of the most important factors in properly balancing the feet is *control of the heel*. Exercises should never be forgotten, nor should the importance of the circulation. Many painful feet are arthritic feet; use general conservative measures in addition to the purely mechanical ones.

Low back pain—who am I to say anything about it? Each authority has his own feelings about the subject, and many differ as to this single point—how to evaluate the flood of thought on intervertebral disc—and fit it into the already complex problem of low back pain. Herniation of the intervertebral disc is unquestionably the cause of many cases of unilateral sciatica which has been unrelieved by ordinary orthopedic measures, but the best teams cannot diagnose and completely relieve symptoms in more than about 70 per cent of cases. There is still a place for more conservative measures than decompression and spinal fusion. Some of these conservative measures which I can vouch for involve the principles of Williams. Many cases of low back pain can be relieved by rest in a position which allows the lumbar spine to flex, as by the support of the bent legs on a Gatch bed. Also, I would hate to have to do without plaster jackets. For the acute strain we all know how much a good adhesive strapping is appreciated. If you can apply a *good* strapping, fewer patients will end up in the hands of the chiropractor. The injection of a local anesthetic, for certain cases of low back pain, as well as for some with sciatica, is a procedure worth being acquainted with. Haggard has written much about it. All that the text-book said, still goes. Foci of infection, posture, foot balance, and so on—each deserves due consideration in treating the low back.

The *shoulder* comes next for consideration. Have you ever seen a middle-aged woman holding her arm tightly to her side, complaining so bitterly of pain in the deltoid region and down the outside of the arm that you suspected she was a hysteric? You probably have. It is possible to cause the most dramatic change imaginable if, as is most likely, this person has an acute sub-deltoid bursitis. If a needle is passed to the point where the two inflamed bursal surfaces are opposing, and a few cc. of 1 per cent novocaine is injected to balloon the bursa and separate the walls, that hysterical individual will become your everlasting friend. Treatment of the chronic shoulder is less dramatic, but, when combined with deep heat and mechanical measures to regain lost motion, the needle is again a valuable instrument. Often calcium can be irrigated from a chronic bursa—again with everlasting gratitude on the part of the patient. All painful shoulders, how-

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ever, are not bursitis. The syndrome of the torn supraspinatus tendon is deserving of consideration. Codman, I believe, has done most to clarify this subject. He stresses the point that a history of strain, causing sharp pain at the greater tuberosity of the humerus, followed by inability to initiate abduction of the arm, usually indicates a torn supraspinatus tendon. If the tear is complete, open repair by suture must be done.

I have left the subject of *poliomyelitis* until last, for I hesitate to discuss a subject which has recently attracted so much attention and comment. The problems of polio, however, are much the same as they were three years ago, so perhaps I can talk a little about it just as though nothing had happened since then.

The epidemiology of poliomyelitis has not been solved. Until it has, I expect that every epidemic which occurs must necessarily be accompanied by more fear and dread, among the laity and profession alike, than any other disease. Once we know how to control its spread, the outlook will be brighter. The evidence points toward the fact that transmission is by droplet infection, spreading the virus to another's nasal mucous membrane, thence to travel up the olfactory nerve to the brain stem, just as was taught in the past. The virus has also been recovered from the intestinal tract, opening up the possibility of a score of different vectors previously not considered. In the end more than one means of transmission may prove possible. Here's hoping this difficult problem will soon be solved.

At present there is a choice of good methods of treatment during the acute stages. The old and conservative method is to put the member at complete rest until the balance of muscle innervation has become stable; then restore function to the joints and uninvolved muscles by physio-therapy and guarded use.

With much enthusiasm and publicity another method of treatment has been recently popularized, as we know so well. In my mind it seems criminal to allow any method of treatment in medicine—regardless of how encouraging it may seem at first—to be placed before the laity as the Kenny treatment has been. Many people really believe there is in existence today a *cure* for poliomyelitis. If only that were true! I sincerely hope that there is not another epidemic of the more severe type of cases while so many people have this pleasant idea in their heads. If that should happen, there will be many disappointed and bitter parents. Even though we have no cure, we do have a better method of treatment. Sister Kenny is by nature a person of such thoroughness and enthusiasm that, when *she* applied physio-therapy to cases of acute poliomyelitis, her results were much better than the physiotherapists themselves had had. Sister Kenny, as Hart recently said, has brought out not new principles but old ones, salvaged from a disorganized field of physio-therapy, and has placed them safely in the hands of the medical profession.

Naturally, when motion is maintained throughout treatment, the period of remobilization after treatment is eliminated. So, case for case, the Kenny-treated patient is farther ahead of the immobilized patient by about twice the time interval of immobilization. Several years will be required to tell how the two methods compare as to actual end-results. *But*—and this is an important but—unless the treatment by packs, passive motion and early muscle training is carried out as thoroughly and carefully as Sister Kenny does it, the results will be disappointing—and, as before, will give way to the less dangerous, less costly, less difficult method of complete rest.

Regardless of which method of treatment has been used, there will be about 50 per cent of all cases with some residual paralysis. For these cases, there is still the same choice of reconstructive operations—with minor refinements from time to time. A good arthrodesis of the foot is one of the most satisfactory operations I know. It stands the test of time and abuse, and I have never yet seen a properly stabilized foot which was painful. Arthrodesis of other joints has its place, depending on the individual circumstances. Muscle transplants, likewise, can contribute much in certain cases. In short, despite the contribution by Sister Kenny of an excellent method of treatment for acute poliomyelitis, there will still be residual deformities in some instances, and many of these will require a long program of reconstructive surgery.

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REMARKS ON THE TREATMENT OF MENINGITIS*

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Meningococcic meningitis has been, from the ages, a dreaded disease, especially so thirty or forty years ago. In the days before the advent of serums those unfortunate enough to have meningitis suffered severely and those who lived nearly always had some sequelae.

Early treatment consisted of supportive treatment only. In this the mortality was terrific; as in the pre-serum days in the United States the mortality was 80 per cent; in France 75 per cent; in England 70 per cent; and in Germany 60 per cent. Later, continuous or frequent spinal drainage was advocated and tried with some degree of improvement in the mortality statistics but the complications were not reduced remarkably.

The advent of serums has changed the picture from the very start. With the refinement of serum, and early diagnosis, the mortality was gradually reduced to about 33 per cent. Even then the treatment was expensive, results were disappointing, and only the very rich or the very poor, in the endowed clinics and sanatoria, could afford adequate treatment.

Meningitis may be divided into three stages: *First,* the carrier stage: tonsillitis, pharyngitis and conjunctivitis. In the *second* stage the patient may go to bed where he is more comfortable, curled on his side, knees up, and head bent towards them. He is extremely apathetic, has loss of facial expression, lowering of voice, and complains of being sore all over. It is during this stage that the rash appears. The *third* stage is bursting headache, vomiting, delirium and coma, stiff neck and positive neurological signs.

The dreaded complications of meningitis are panophthalmitis, endocarditis, pericarditis, otitis media, purulent arthritis, or internal hydrocephalus, and various cranial nerves or combination of nerves are affected.

A new day has advanced in many fields of medicine with the advent of chemotherapy but none has surpassed the amazing results obtained by chemotherapy in meningococcic meningitis. Meningitis, with all its terrors, has been reduced in its seriousness to a relatively simple infection. It is still not to be ignored, but its high mortality and almost insurmountable difficulties have been reduced to a point that the best results can be obtained by us all and the expense of treating the disease is well within the purse of the poor as well as the rich.

A review of current literature will establish our progress and show the improved results, even in a finer choice of the sulfonamide group. Banks,[1] in 1941, reported a series of 96 cases of cerebrospinal fever with two deaths. In 52 cases sulfathiazole was used after one or more preliminary doses of sulfapyridine, and in 44 cases sulfathiazole was used alone. The fatality rate of cases treated, mainly with sulfathiazole, was 2.1 per cent. This compares favorably with previously treated cases with serum and sulfanilamide and with sulfanilamide or sulfapyridine alone or combined. He concludes, "sulfapyridine is equal in potency to sulfathiazole in treatment of meningococcic meningitis". Banks[1] recommends a 5 per cent solution of sodium salt of the drug in all cases of severe vomiting.

Hodges and Strong[2] report on 110 cases of meningococcic meningitis in Sydenham Hospital in Baltimore, from January, 1938, to February, 1942. Twelve of the 110 patients died, a mortality of 11 per cent. In studying these cases there were only

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2 deaths in a series of 59 cases in children under 15 years of age. Only one of the 10 infants under 1 year of age died.

The incidence of youth is clearly shown in this series. It is interesting to note in Table I that in 57 cases in which sulfanilamide alone was used there was 17.5 per cent deaths and 53 cases in which sulfadiazine, sulfapyridine, and sulfathiazole were used there was only 3.8 per cent of deaths.

TABLE I

Effect of various sulfonamides:

DRUG	CASES	DEATHS	% FATALITY
Sulfanilamide	57	10	17.5
Sulfapyridine	7	0	0.0
Sulfathiazole	36	2	5.5
Sulfadiazine	10	0	0.0

In this series of cases there were the usual number of complications. There was permanent bilateral eighth nerve deafness in 7 cases. One patient had permanent unilateral fourth and seventh nerve destruction in addition to eighth nerve deafness. There were 5 cases of arthritis, of which all the patients recovered.

Bruce,[3] in reviewing Dwight and Thomas' work in meningitis in an epidemic in Halifax, Nova Scotia, reports treating 82 cases with sulfapyridine with 7 deaths, or 8.5 per cent mortality. His conclusions are that meningococcic meningitis responds better to sulfonamide drugs than it does to serum treatment, given either intraspinally or intravenously.

Kasich and Shulman[4] review a series of reports dating back to the serum treatment days and found varying mortalities from 15 to 50 per cent, i. e., Hoyne's report of 85 cases treated with antitoxins with 23.5 pr cent mortality. In another series of cases Dr. Kasich and Shulman gathered 211 cases with a mortality of 45.9 per cent. There are other observers' reports listing 96 cases treated with antitoxin intravenously with a mortality of 15.9 per cent.

Banks,[5] in an earlier report, reviews 65 cases with serum in large intravenous doses and with sulfanilamide in various doses, resulting in 8 deaths or mortality of 12.3 per cent. Banks later reported treating 72 patients with sulfanilamide and sulfapyridine with only 1 death, a mortality of 1.4 per cent.

Quequiner[6] reports 271 patients treated with sulfanilamide alone. In this series he had 27 deaths, or a mortality of 10.7 per cent.

In the original report of Kasich and Shulman,[4] they treated 12 cases—six by combined methods of serum and chemotherapy, and six by chemotherapy alone. They conclude that chemotherapy is the method of treatment alone, and is not benefited by serum when one takes into account serum sickness and serum reactions and sensitivity.

Dingle and Thomas[7] treated a series of 13 patients with sulfadiazine with only one death. This death occurred ten hours after admission to the hospital. The others had a prompt recovery.

Campbell[8] gave an excellent review of patients treated by serum and sulfonamides. He had 40 patients treated with serum alone. There were 20 deaths, or 50 per cent mortality. In a series of 10 patients treated with serum and sulfanilamide, there were no deaths. He concludes that chemotherapy, alone or combined, is the method of choice for treating meningococcic meningitis. He has magnificently culled from literature the following table from August, 1937, to January, 1941. These results may include some of the material previously quoted.

TABLE II

DRUG	CASES	DEATHS	% FATALITY
Sulfadiazine (alone)	13	1	7.6
Sulfathiazole (alone)	70	3	4.6
Sulfapyridine (alone)	588	23	3.9
Sulfanilamide and Sulfapyridine	214	17	7.9
Sulfanilamide (alone)	588	66	11.2
Serum and Sulfanilamide	165	20	12.1
Serum	1,109	349	31.4

This series of 2,747 cases represents the work of Dr. Campbell, and is quoted from his article. In using the drug it is advisable to continue dosage from 3-5 days after temperature is normal.

One cannot help but be overwhelmingly impressed by the tremendous reduction of mortality from the use of the sulfonamide group—a reduction not in theory but in actual fact.

Better results will be obtained in the future by early diagnosis of this disease, and adequate treatment. Adequate treatment consists of proper fluid balance, caloric intake, and sufficient amounts of drug maintained over proper periods of time. In many cases our failures can be summed up by "too little and too late". Closer analysis of our failures will show that certain concurrent diseases have modified our results, some of which are heart disease, coronary occlusion, chronic alcoholism. The literature already quoted shows the relative difference in

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our fatalities in children and the higher age group. I sincerely believe that deaths in the higher age groups were due largely to intercurrent general conditions that were present when the disease struck, and many deaths from meningitis in the older age group were complicated by advancing degrees of senility.

Routine cannot be like a rubber stamp but, in the treatment of meningitis, there are some definite criteria that must be carried out in order that our results will fall in line with the results of the findings of other men. Dingle and Finland[9] have worked out a splendid outline which is simple and to the point—once the diagnosis has been made. I am inclined to believe the diagnostic spinal tap is all that is necessary, for, apparently, we have very little to be gained by further spinal taps.

I would like to give here a slightly modified version of Dingle and Finland's[9] General Outline of Treatment:

(1) Immediate institution of chemotherapy.
(2) Drugs of choice—sulfapyridine and sulfadiazine.
(3) Intravenous—.1 gm. per kilo. of body weight for an initial dose as a 5 per cent solution of sodium salt in distilled water, or a 2 per cent or less in physiological sodium chloride solution.
(4) Parenterally—*Subcutaneously* as a .5 per cent solution in normal saline.
Intramuscularly as a 10-33 per cent solution (not recommended).
(5) Orally, a similar dose divided into 4-6 equal amounts over 24 hours. Oral administration is recommended for all further therapy after the first two days.
(6) Correction of dehydration—5 per cent solution of dextrose up to 6 per cent of body weight.
(7) Determination of sulfadiazine and sulfapyridine blood levels (10-15 mg. per cent ideal).
(8) Determination of hemoglobin, white and red blood count, and urinalysis daily.
(9) Continuation of sulfanilamide therapy. Continue sulfadiazine or sulfapyridine 2-5 days after recovery.

Dingle and Finland advocate the use of serum when the patient fails to respond in 24 to 48 hours.

CASE I.[10]—The patient was a white male, 9 years old. Admitted to the hospital October 31, 1942, complaining of general malaise and vomiting. He was seen the day before in his home. His past illness was negative save history of asthma.

Examination showed a rather under-nourished boy in semi-coma. He could be aroused with difficulty. His pupils reacted to light; chest normal; heart slow; pulse of good quality. He had stiffening of the neck and a positive Babinski. His spinal count was 1580; differential 20 per cent, lymphatic 80 per cent. Poly smear showed the meningococcus to be present. Globulin was greatly increased; sugar 83 mg.

The temperature on admittance was 101 and went to 103 in a short time. The patient had sulfadiazine gr.xv q.4 hrs. for 24 hours; at the end of this time the blood level was 11 mg. per cent per 100 cc. On November 1, 1942, the dosage was cut to grs.xv q.6 hrs. The respective readings were 11/2—17.1 mg.; 11/4—8 mg. per cent; 11/5—11 mg. per cent; 11/6—10.4 mg. per cent. The temperature dropped and on the second day it was 100.2; the third day it was 99.6; and on fourth day 99.4. The sulfadiazine was discontinued 11/10/42. The patient made an uneventful recovery, receiving in addition only supportive treatment.

CASE II.[10]—This patient was a white female, age 4 years, who entered the hospital November 2, 1942, at 5 P. M., with a temperature of 101, complaining of fever and chills, vomiting and abdominal pain of two days' duration. She gave history of convulsions the day before and of vomiting the day of admission. Physical examination was essentially negative except for some stiffness of the neck. Spinal puncture showed cell count of 10,000; 95 per cent polys and 5 per cent lymphocytes. Meningococcic organisms were seen in the smear.

On November 2, 1942,, the patient was given sulfadiazine, tab. ii (xv grs.), every six hours, after which the dose was reduced to tab. i (7.5 grs.). On 11/4/42 sulfadiazine was discontinued, then resumed the next day in half tablet doses every six hours. This was continued to 11/12/42, at which time it was discontinued. The blood sulfadiazine level on 11/3 was 11.7 mg. per cent; 11/4, 17 mg. per cent; 11/5, 5 mg. per cent. The temperature on admission was 101; it did not go higher the second day; the third day 99.2; fourth day 99.2, and from the sixth day to the thirteenth day only one reading was as high as 99. The patient was discharged on

the thirteenth day with an uneventful recovery. She received only supportive treatment in addition to the above mentioned doses of sulfadiazine.

CASE III.—(Personal Case). C.W., colored male, age 25 years; entered hospital on October 18, 1942, completely unconscious, wild and delirious, with temperature of 103.2. This patient had been seen the night before when a diagnosis of influenza had been made. The physical examination on admission revealed a completely delirious negro male, with knees drawn up, neck stiff, and a positive Kernig sign.

This patient, upon arrival in the hospital, had a spinal puncture. The cell count was 18,500 under no pressure. He was given 5 gm. of sodium salt in 100 cc. of distilled water, followed by 1000 cc. 10 per cent D.R.L. solution. He became rational towards evening of October 18th, and was able to take the drug by mouth. He was given tab. ii (xv grs.) every four hours from that time for six days. The sulfadiazine level only reached 5 mg. per cent. A second spinal tap on the 21st showed 5300 cells. His temperature on the third day was 99.6. His sulfadiazine was continued at the above dosage and the temperature returned to normal on the sixth day. He remained in the hospital for ten days. His chief complaint was a bursting headache which was controlled by small doses of morphine. His only complication was arthritis of the left knee. This cleared upon rest in bed.

After dismissal from the hospital he was given sulfadiazine tab. ii every six hours for five days because of the arthritic condition.

SUMMARY AND CONCLUSIONS

Some of the recent literature on the treatment of meningitis has been reviewed. The specific trend to chemotherapy has been shown and its most gratifying results have been noted.

The best uniform results were obtained by having a sulfonamide concentration of 10 to 15 mg. per cent, and maintenance of this for three to four days after the temperature has returned to normal. The early treatment by adequate chemotherapy shows satisfactory, uniform results. The use of chemotherapy is simple, less toxic to the patient, and reduces sequelae of the disease more than any other form of treatment.

In days of over-crowded hospitals and inadequate nursing care, we can easily use this method to treat meningococcic patients in the home without undue criticism.

The results from the treatment of hundreds of cases cited shows definitely that chemotherapy is the method of choice, and sulfadiazine, sulfathiazole, and sulfapyridine the drugs of choice. Further statistical study may place one of these as the sole drug of choice.

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THE PHARMACIST LOOKS AT THE PHYSICIAN*

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This paper has suggested itself as a possible step on the road to closer cooperation between two public health professions—pharmacy and medicine. It is not intended to constitute a whitewashing of one, nor is it a sermon to the other. The material to follow is predicated on the assumption that a *greater* degree of collaboration between pharmacists and physicians would be beneficial to the public and, incidentally,

*Read before the Richmond Academy of Medicine, January 12, 1943.

to our profession.

It is recognized that there are unfortunately some pharmacists who fail to conform to the general pattern assumed in this paper. It is hoped that pharmacy is approaching the day when it will learn to discipline its licensees as medicine does its own recalcitrants. Meanwhile, it is suggested that it would be well worth the physician's time to determine the best pharmacists in his locality and send his patients to them.

How, then, does the pharmacist look at you, the the physician (Perhaps this should be read rapidly, for as Emerson said, "In skating over thin ice, our safety is our speed".)

He admires and respects you, as men and women, for your training and ability. You have made greater academic advances than the pharmacist, and he is aware of that fact. Frankly, the pharmacist is rather envious of the psychological hold the physician has on the public, but very often he realizes that he would merit more confidence if he were willing to work as hard toward this end as have the physicians. The pharmacist feels he can, and would, furnish more valuable assistance if he received the proper encouragement. He has an ideal of service to the public and to the physician. However, the pharmacist feels that those he serves are not always entirely satisfied with his actions, and he is usually at a loss for an explanation. In a few cases, some bitter experiences have caused him to stubbornly, but wrongly, shirk from lending that assistance he can so often furnish with efficiency. The pharmacist feels the physician is careless in writing and sending in his prescriptions, in giving out samples, in referring to the charges for medicines, et cetera. Worst of all, he has a deep-seated conviction that the physician does not sufficiently trust his judgment or integrity on matters pharmaceutical. The modern pharmacist's professional training has taken four years, and he has a degree recognized by major graduate schools. That, Doctor, is the pharmacist's composite view of a composite you—a curious mixture of respect, admiration, envy, and vexatiousness. The only facets of that picture which need consideration here are the last two, (i.e., insufficient trust in the pharmacist, and thoughtlessness in certain actions) for they alone are really critical in nature. Those constitute an indictment which pains like an old intractable ulcer.

With war creating further demands on the time of both pharmacist and physician, these difficulties should be ironed out promptly. That is the reason our national association and yours have already had several meetings to plan closer cooperation between the two professions. "It appeared quite apparent that . . . a closer coordination between medical and pharmaceutical personnel was not only desirable but necessary in the face of present day needs"—this from a report summarizing the recent Cleveland conference of the A.M.A. and A.Ph.A., and published in your official organ, *The Journal of the American Medical Association.* It might be added that committees were appointed to continue this work and are actively engaged in the project.

Let us elaborate a bit on some of the points mentioned above in order to make their meaning perfectly clear.

It was mentioned that the pharmacist had an ideal of service, which is certainly true. Sometimes we, in the rather neutral zone of teaching, feel the retail pharmacist has *misdirected* his service ideals to the detriment of everyone concerned, both lay and professional. Let me illustrate one example of what is in my mind by a question from a recent examination in organic pharmacy. A hypothetical situation was set up as follows:

"You are about to open a Professional Pharmacy. Your contacts with three or four physicians who know you and trust your integrity and judgment will furnish the bulk of your prescription work. You therefore determine to stock a limited number of items of each type mentioned below:

(a) Name your choices in each group.

(b) Justify briefly your decision.
Note:—You should consider ranges of usefulness, variations in content, whether or not official, variety of forms for administration, etc.

(c) How would you explain briefly the general chemical nature of each product?
N.B. Read the above carefully.
Put your answers in the order indicated.
Use only products we have studied this quarter."

Then followed a long list of types of products ranging from androgens to zinc salts, only two or three of each class being required for this hypothetical stock.

You will note the emphasis on the ideal conditions under which the pharmacy was being opened. These physicians trusted the judgment and integrity of the pharmacist—they would use what he offered. Yet those members of the class with the most practical experience tried to justify their choices by saying "Whichever the doctor wants," or, "I'll stock what is ordered," and similar phrases. Is the meaning clear? The pharmacist wants to give service, for he, like you, belongs to a service profession. However, he is so accustomed to the practice of attempting to stock everything he has ever seen prescribed by various physicians, that even in the classroom these students failed to cerebrate accurately. The pharmacist cannot furnish reliable medications at a reasonable cost if he dispenses a different specialty every time the physician prescribes. His overhead, due to unnecessary duplication, is tremendous. There are about 76 digitalis preparations (excluding tinctures) on the market representing essentially three types of products. At least as many polyvitamin preparations are available. Examples could be multiplied *ad nausseam*.

Is it not obvious that a closer relationship between physician and pharmacist would benefit all concerned? A fair, though an imperfect example of a policy of cooperation is seen here at the M.C.V. Hospital with which many of you are connected. The pharmacy stocks three preparations of digitalis, and I fail to recall any special requests for others in the last 150,000 prescriptions, including all those for private patients. A very wise old physician of Richmond is said to be fond of advising the young men, "When you don't know, consult an expert." The continual visits of the interns to our hospital pharmacy speaks eloquently of the aid received there.

Important though it is, elimination of duplication would not be the only advantage to accrue to a closer relationship between pharmacy and medicine. For example, many legal safeguards have been erected for the public, both locally and nationally. The physician would learn to appreciate the responsibilities of both the pharmacist and himself, and better understand the why of some requirements. For instance, the doctor would know the necessity for many of the pharmacists' 'phone calls to obtain omitted information. Very often those calls "save face" for the physician when there has been an inadvertent error. The pharmacist faces more rigid and more frequent investigation of his handling of various drugs than you do. He wants to give service, but the physician's cooperation in promptly furnishing correctly written prescriptions for narcotics and other dangerous drugs is essential.

The pharmacist feels the physician is prone to distribute samples unnecessarily and thereby create certain incorrect impressions in the minds of the patients. He is injured in his relations with the public by the patients' assumption that the medicines are very inexpensive when such is rarely the case. However, the pharmacist realizes that samples furnish a convenient means of trying new medicaments, or testing new combinations of the old, and he has *no* desire to interfere with or contest your prerogatives.

The pharmacist does not suggest the length of time necessary to diagnose a case, nor set the doctor's fees. He would like to believe his time and charges were not indicated to the patients before they had brought the prescription to the pharmacy.

The crux of the situation from the pharmacists' point of view is this: too little trust is imposed in the integrity and judgment of the pharmacist. I submit that the modern pharmacist's knowledge and training will surprise and aid you if given a chance. He does not come to discuss these matters with you because he fears, perhaps wrongly, that he may be rebuffed. The pharmacist *knows* he and the physician should be drawn closer together for the good of the public, and, incidentally, the service of the public is the responsibility of both pharmacy and medicine. More contacts and conferences, and most, if not all, differences can be made to vanish. As physicians, you have the pharmacists' respect, their admiration, and their desire to serve. Give them the opportunity to help the public and you by using their professional knowledge to better advantage.

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RECOMMENDATIONS FOR A VENEREAL DISEASE CONTROL PROGRAM IN INDUSTRY

Report of the National Advisory Committee on the Control of Venereal Diseases in the United States

OTIS L. ANDERSON, M.D., *Chairman,*
Bethesda, Maryland.

In order to assemble current authoritative information and to formulate basic principles applicable to a program of venereal disease control in industry, the Surgeon General has appointed an Advisory Committee to the United States Public Health Service. This Committee has outlined the objectives of such a program as:

A. MEDICAL AND PUBLIC HEALTH:

1. To find and refer for proper medical management all cases of venereal diseases among workers in industry.

2. To establish equitable policies for the employment of applicants and continuation of services of employees who have venereal diseases.

3. To coordinate the community and industrial venereal disease control programs.

B. EMPLOYEE:

1. To improve the physical condition of employees.

2. To reduce the number of workdays lost through illness or injury.

3. To provide job placement.

4. To prolong and increase the earning power of employees.

C. EMPLOYER:

1. To reduce compensation costs.

2. To lessen work interruptions and labor turnover.

3. To enhance production by increasing the efficiency of workers.

4. To minimize personnel problems.

In order to assure agreement on all phases of fundamental policy, the committee recommends that certain agencies be consulted in carrying out this program: the State labor department, industrial commission or similiar department of State government; the appropriate committee of the State medical society; the association representing employers; the labor organizations; appropriate voluntary health and welfare associations.

Responsibility for the administration of the program should be shared by the industrial hygiene and venereal disease divisions of the State health department. The program should not be inaugurated without a complete educational program. The employee should be convinced that adequate treatment protects both his health and his ability to earn a living, and the employer that not all cases of venereal disease are infectious, through an educational program before venereal disease control measures are introduced.

In order that the control program may be effective, preemployment examinations should be mandatory for all workers. Laboratory tests for syphilis and gonorrhea should be made a part of the periodic, reemployment or "return from illness" physical examinations which are the policy of the industry. The interval between examinations should under no circumstances be more than three years.

It is of utmost importance that the results of the medical examination be considered confidential between the worker and the medical staff. Information should be furnished to others only with the consent of the individual concerned or, failing this, on legal advice. The medical staff should make proper recommendations to the management as to the physical fitness of the employee for work. When the usual clinical record is kept in an open file, venereal disease forms should be filed in the medical department for the use of the medical staff only.

There is no reason for denying employment to an applicant or for discharging an employee because an examination has revealed evidence of syphilis or gonorrhea, provided:

1. That the employee agrees to place himself under competent medical management;

2. That, if the disease is in the infectious stage, employment should be delayed or interrupted until such time as a noninfectious state is established through treatment and open lesions are healed:

3. That when syphilis exists in a latent stage, em-

ployment should not be delayed or interrupted;

4. That employment may be deferred or denied when the individual is an industrial hazard;

5. That occupational readjustments of employees be made of individuals developing disabling manifestations;

6. That workers with syphilis in any of its stages be excluded from areas where there is exposure to chemicals which may produce toxic reactions, and those having cardiovascular syphilis or neurosyphilis should not be exposed to physiologic stresses;

7. That workers with gonorrhea should be allowed to work only under special medical observation during the administration of sulfonamide drugs.

The applicant or the employee whose examination reveals evidence of a venereal disease should be called to the industrial physician's office for a conference. He should be instructed as to the nature of the disease which he has in order that he may cooperate intelligently with the requirements of the program. He should be referred to a reputable source for medical attention and be furnished with a letter directed to his physician stating the results of the examination and what is expected of the employee as to regularity of treatment if he is to be employed. The industrial physician should receive a record of treatment at about monthly intervals. The names of individuals who have neglected or refused treatment should be turned over to the health department for appropriate action in bringing them back to treatment.

The plant physician making a tentative diagnosis of communicable syphilis or gonorrhea should without delay acquaint the appropriate health authority with the facts.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This white 39 year old gravida ten para nine was seen by a physician during the prenatal period. No abnormality was noted other than having influenza during the eighth month of pregnancy. She was in labor at the time of admission to the hospital. The temperature, pulse and respiration were 98.6—84—20. Three injections of pituitrin of 4 minims each were given and delivery was completed by low forceps, under chloroform anaesthesia, three hours and thirteen minutes after admission. The cervix was lacerated. At the time of the patient's return to her room she was bleeding freely. Two hours later the bleeding was profuse, at which time the vagina was packed with gauze. When bleeding recurred, oxygen and coramine were given. Death occurred three hours postpartum.

COMMENT

This has been classified by the Committee on Maternal Health as a preventable obstetrical death.

The delivery was by low forceps following small doses of pituitrin. The cervix was lacerated. Postpartum bleeding continued during a three hour period.

Bleeding, in this case, may have been from one of many sources but, with vaginal bleeding and a known laceration of the cervix, repair of the cervix might have afforded relief. With the present conveniences for plasma, and often for whole blood, a transfusion would have been in order during or following repair of the cervix. The bleeding was not thought by the physician to be sufficient to cause the patient's death.

In the case of a multipara, in labor at the time of admission to the hospital and making normal progress, the necessity or advisability of using measures to hasten delivery is questionable.

Patients should be kept in the delivery room and watched carefully in the presence of abnormal postpartum bleeding or, to make the statement in another way, a patient may be returned to her room when bleeding has been controlled.

The autopsy report showed that the patient had a pneumonia. This report is not to be discredited but, with a normal course, death was rather early for pneumonia to have been the primary cause.

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MENTAL HYGIENE NOTES

Mental Hygiene Society of Virginia.

The Mental Hygiene Society of Virginia held one of its best programs at Roanoke on April 23. It was an all day and evening affair, but it was full of interest and held the attention of the large groups that filled the rooms at each session.

The morning and afternoon meetings were held for the members of the Virginia Conference of Social Work only. In the morning Dr. Samuel W. Hamilton, Mental Hospital Advisor of the U. S. Public Health Service, of Washington, D. C., read a most instructive paper on "The Problem of the Military Rejects and Casualties". The discussion of Dr. Hamilton's paper was conducted in a very interesting and enlightening manner by Dr. O. B. Darden.

Dr. David C. Wilson then followed, using the topic, "The Problem of the Civilian Maladjusted." This paper is worthy of the close reading of every person who is interested in making Virginia a better place to live in. Judge J. Hoge Ricks, of the Juvenile Court of Richmond, led the discussion on this paper by giving some very practical applications on his experiences in his court.

The afternoon meeting was given over to what may be termed Postwar Planning in Mental Hygiene, especially as it pertains to Field Mental Health Clinics. Dr. Joseph E. Barrett, State Supervisor of Mental Clinics of the Department of Mental Hygiene, and Mrs. Donna Banting Bemiss, Member of the Board of Directors and Treasurer of the Mental Hygiene Society, gave most interesting and instructive addresses. Dr. Barrett gave a general picture of the great need for a broad program of mental health prevention through clinics, and Mrs. Bemiss presented a blueprint of the clinic setup as it applies to the local community situation. These papers were discussed by Miss Wilhelmina Baughman, Intake Supervisor, Children's Bureau, State Department of Public Welfare, and Mrs. Margery Wyatt, Superintendent, Girls' Industrial School, Bon Air, and Mrs. Alyne Caldwell, Superintendent of Public Welfare, Pulaski, Virginia.

The evening meeting was open to everybody and quite a departure from anything ever tried before, with the general title of "Alcohol, a State and Psychiatric Problem." It was discussed from the standpoint of a member of the A. B. C. Board by Senator Hunter Miller, and of the psychiatrist by Dr. Robert V. Seliger, of Johns Hopkins Medical School of Baltimore, who is a national authority on the treatment of alcoholism. The general conclusion was that drinking alcohol to excess is bad for the individual drinker and to most everything else it touches.

A luncheon and business meeting was held at noon, which resulted in the election of the following officers and Board members to serve the Society in the coming year:

PRESIDENT—Dr. Joseph E. Barrett.
VICE-PRESIDENT—Mrs. Harvie DeJ. Coghill.
SECRETARY—Dr. Mabel F. Martin.
TREASURER—Mrs. Donna Banting Bemiss.
EXECUTIVE SECRETARY—F. W. Gwaltney
NEW BOARD MEMBERS to fill the terms of these expiring in 1943:
Dr. J. C. Faw, Richmond
Major Rice M. Youell, Richmond
Dr. F. D. Wilson, Norfolk
Dr. Frank H. Redwood, Norfolk
Mrs. Harvie DeJ. Coghill, Richmond
Mrs. Morton G. Thalhimer, Richmond
Dr. Jacques P. Gray, Richmond
Dr. Rex Blankinship, Richmond
Dr. Mabel F. Martin, Richmond

Dr. Frank H. Redwood, President of the Society, presided at all meetings. Dr. Howard R. Masters was program chairman.

F. W. GWALTNEY,
Executive Secretary.

CURRENT INFORMATION ON SYPHILIS

Sponsored by
COMMITTEE ON SYPHILIS CONTROL
MEDICAL SOCIETY OF VIRGINIA

Present Status of the Intensive Arsenotherapy of Early Syphilis

LOREN W. SHAFFER, M.D.,*
Detroit.

The 5-day massive therapy for early syphilis has aroused great interest. If early (primary and secondary) syphilis can be cured in 5 days with intensive treatment, the control of syphilis will be revolutionized. This treatment, if further observation proves that it is both safe and effective, offers the greatest advance in the therapy of syphilis since Ehrlich's introduction of salvarsan. The two main problems in syphilis control are the finding and holding of early cases until they have received adequate continuous treatment for 18 to 24 months. If treatment can be completed in 5 days, the almost insurmountable problem of holding the cases for treatment will be solved.

The suggestion that very large doses of arsenicals might be given with safety in the treatment of syphilis was first made by Dr. Louis Chargin, syphilologist at the Mount Sinai Hospital and the New York City Department of Health. It was based on the observations showing that "speed shock" could be prevented by very slow intravenous administration (60-90 drops per minute). Such administration also permitted the introduction of remarkably large amounts of highly toxic substances with complete impunity. Such work with the arsphenamines was begun in 1933 on Dr. Baehr's service at the Mount Sinai Hospital, New York City.

In the first series, 25 patients with early syphilis were treated by Chargin, Leifer and Hyman. Neoarsphenamine in doses of 4 to 4.5 gm. was administered by continuous intravenous drip in 5 days; 87 per cent of these patients were cured, as far as it is possible to determine, at the end of 5 years. No additional patients were treated until 1937, when this method of treatment was resumed under a committee. Eighty-six patients with primary and secondary syphilis were treated with neoarsphenamine and by the method used in the first group. Two-year cures were reported in 91 per cent of these cases. The incidence of toxic reactions was high, especially of neuritis. The only treatment fatality in the two series (111 patients) was due to hemorrhagic encephalitis. This caused the discontinuance of neoarsphenamine in the fall of 1938. Arsenoxide (mapharsen) was substituted.

When mapharsen was first tried, no experience with its use in larger dosage was available. The usual recommended dose is 1/10 of the dose of neoarsphenamine. Since 4 to 4.5 gm. of neoarsphenamine was used in the preceding series, a total dose of 0.4 gm. or 400 mg. of mapharsen was administered by intravenous drip similar to that used with neoarsphenamine. It soon became obvious that the toxicity of mapharsen was so slight that increased dosage could be safely employed. Also, because of failures with smaller doses, it became desirable to try larger doses. The dosage was increased to 700 mg. and then, by slow stages, through levels of 800, 1,000, 1,100, and, finally, to the newly recommended standard dosage of 1,200 mg.

Mapharsen is administered at the rate of 240 mg. per day, for 5 days. The total daily dose of 240 mg. of mapharsen is dissolved in 2,400 cc. of 5 per cent glucose solution and is given at the rate of 20 mg. per hour and continued for 12 hours. This represents a daily dose of 4 times the amount usually injected (60 mg.) and a total of 20 standard doses in 5 days.

Approximately 330 cases were treated with mapharsen by the New York group. The most frequent reactions encountered were gastrointestinal upsets and secondary fevers which usually occurred on the day after treatment was completed. Such febrile reactions were frequently associated with a transient toxic skin eruption. Exfoliative dermatitis, blood dyscrasias, evidence of renal damage, or marked liver damage, were not encountered. Neuritis, which occurred in 35 per cent of the cases

*Reprinted in part with the permission of the writer and publisher (Venereal Disease Information, April, 1943).

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treated with neoarsphenamine and was often quite severe, occurred in only 1.6 per cent of the mapharsen series and was very mild in character. The most feared reaction is hemorrhagic encephalitis, of which there were 2 cases in the neoarsphenamine series (111 cases), 1 resulting fatally, and 3 in the mapharsen series (330 cases), 1 of which was rather severe but resulted in recovery, and 2 mild cases.

A meeting was called in New York City in April, 1940, to which representative syphilologists and venereal disease control officers were invited. The details of the continuous drip method were presented and the results discussed. Those interested, and in a position to carry on this work, developed new centers for the further use of this method of treatment. In general, the results parallel very closely those reported in the New York series. There had been a total of 5 fatalities among 1,800 patients receiving this treatment up to that time, giving an incidence of fatal reactions of approximately 0.3 per cent. This work is being continued, and data from several thousand cases will soon be available.

Various modifications of the original New York continuous drip method have been tried in different places throughout the country. In Detroit we have developed a rapid drip modification which consists of the administration of approximately 1.2 mg. of mapharsen per pound of body weight to a maximum dose of 180 mg. dissolved in 1,000 cc. of 5 per cent glucose solution. It is given by gravity (vacoliter), requires 60 to 75 minutes for administration, and is repeated daily for 5 days. It requires much less hospital supervision. It was hoped, even though the total dosage was decidedly less (750 to 900 mg.) than called for in the New York method, that its administration in a shorter period of time—approximately 1 hour—might prove equally effective. We have now treated approximately 430 patients by this method. We have had 1 case of toxic encephalitis with recovery and 1 case which terminated fatally.

We have had no failures in our Wassermann-negative primary cases. Our results have paralleled closely the New York series for Wassermann-positive primary cases, but have been decidedly inferior for secondary cases. This experience would indicate that there is a definite need for larger dosage, at least in cases with secondary syphilis. We have added bismuth to this treatment procedure beginning July, 1941, and believe that, with this addition, our results will prove more satisfactory. This will be discussed later.

Another modification of intensive treatment has been the multiple injection method. This consists of giving by syringe technic (10cc.) a dose of 60 to 100 mg. of mapharsen once or twice daily and repeating this dosage daily until a total of 1,200 mg. has been administered. A dose of 60 mg. may be administered twice daily for 10 days, 100 mg. twice daily for 6 days, or 100 mg. once daily for 12 days. Reports would indicate that the incidence of serious reactions is at least as high, and probably higher, than with the slow drip administration. Such methods are purely experimental and should not as yet be considered for general use.

Another modification of intensive therapy is the combined use of mapharsen and fever therapy. It is considered that the addition of fever therapy, instead of increasing, actually decreases the toxic effects of arsenic. In fact, Simpson's group has made a surprising observation in that patients, who have recovered from an arsenical exfoliative dermatitis and their allergic state proved by a recurrence after a single injection of 5 mg. of mapharsen, may be given standard doses without reaction if administered at the height of the febrile reaction. No extensive reports are available with this method. Its use will require special hospital supervision which limits its availability. This method will warrant further observation, however, and technical difficulties should not materially limit its usefulness if it proves safer and even more effective than other modifications.

One of the most interesting proposals has also been announced by Simpson and calls for only 1 day of treatment. The method consists of the intramuscular administration of 4 gr. of bismuth salicylate 24 hours before artificial fever therapy is begun. The patient is then placed in a fever cabinet and given continuous fever therapy for 10 hours with temperatures from 105° to 106° F. He is also given 120 mg. of mapharsen in divided dosage by syringe technic during the height of his febrile reaction. Simpson aims at reducing the time of administration of treatment from 5 days to 1 day by the combined used of fever, arsenic, and bismuth. Further reports on this method of treatment will be awaited with interest.

At the present time, therefore, intensive therapy

is being used in several different forms: the slow, continuous drip (New York City); the rapid drip (Detroit); the multiple injection (Thomas-Schoch); fever therapy plus multiple injections (Thomas-Simpson), and the 1-day fever-arsenic-bismuth method (Simpson). Experience gained from the use of these methods would at last suggest that the aim of treatment should be the administration of approximately 1,200 mg. of mapharsen in a 5 to 12 day period.

The addition of bismuth to this method of treatment is a recent, interesting development, and it is hoped that by the addition of bismuth the effectiveness of the method may be further increased without accentuating toxic effects and that a reduction in the total arsenic dosage will be possible. The period of observation is too short to reach any definite conclusions, but we have had practically no failures in the patients so treated. It is expected that bismuth will delay the occurrence of serologic or clinical relapse, but our experience with patients observed for more than a year makes us feel that the addition of bismuth is going to increase very materially the efficiency of our method of treatment. We have not had a single case of toxic encephalitis since starting to use this method (200 patients), and this makes us feel that the addition of bismuth is not going to increase our incidence of toxic reactions. The investigators using the other methods of intensive treatment also have added bismuth therapy, and it is expected that equally enthusiastic reports will be received.

At best, such methods of intensive therapy will probably have a limited field of usefulness for the average practitioner and the smaller venereal disease clinics. One very definite observation which we have made in regard to the use of these methods of treatment is that mapharsen can be given in larger and more frequent dosage than we formerly felt safe to use. There is an urgent need to develop a simplified method that can be used with safety on ambulant patients. Various attempts at such modifications are now being made.

Eagle is using a similar method of treatment for ambulant patients consisting of injections of mapharsen 3 times weekly for 12 weeks. This method is to be tried both with and without combined bismuth therapy. His system is based on experience with experimental therapy on 2,500 rabbits from which he concluded that the total curative dose of mapharsen is approximately constant whether administered in a few days or several weeks and that the margin of safety between the toxic and therapeutic dose is increased by prolonging the duration of treatment.

It is my belief that two methods of intensive therapy will develop from this program: the 5-day or even 1-day intensive method requiring hospitalization and special supervision, and an ambulant method giving 3 injections of mapharsen weekly for a total of at least 1,200 mg., probably combined with bismuth.

I have not discussed the details of technic, management, or reactions in this review. Before any physician attempts to use intensive therapy he should refer to the literature for such information. I have endeavored to present a short summary of the present status of intensive treatment and some of the outstanding modifications which are being tried. Many patients who have had intensive treatment will be seen at a later date by other physicians. Frequently these patients are subjected to further treatment by such physicians even shortly after intensive therapy has been completed, because their blood serologic reactions are still positive. In general, the rate of serologic reversal depends upon the degree of quantitative positivity of the serologic reaction at the start of treatment or on the duration of the infection. Strongly positive cases of primary and secondary syphilis usually require from 3 to 6 or more months for their serologic reaction to reverse to negative, while less strongly positive cases of early primary syphilis tend to show serologic reversal in 1 to 3 months. Therefore, a positive serologic reaction on a recently treated case does not indicate failure or necessitate further treatment on this basis alone.

The critical time for clinical or serologic relapse is between the third and ninth month and has usually been preceded by a dropping reagin titer to either negative or only slightly positive. A quantitative serologic test is desirable in following these cases. Such tests should be repeated at monthly intervals for at least the first year of observation and should be accompanied by very thorough physical examinations for evidence of mucocutaneous relapse. Physicians following patients who have had intensive treatment should consult the center at which the treatment was given, unless definite clinical relapse

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has occurred, before deciding on future plans for these patients.

CONCLUSIONS

Intensive methods of treatment must still be considered experimental. The potential hazard, at least of short intensive courses, makes it necessary to advise that they should not be attempted by physicians without extensive experience in the treatment of syphilis. Further information is being rapidly accumulated, and it is expected that such experience will permit the establishment of a definite procedure to be recommended in the near future for use in private practice and in the military services. Intensive therapy is being tried in various types of latent and late syphilis, but its use in such cases is highly experimental and not as yet recommended. Its use should be restricted to previously untreated cases of early (primary and secondary) syphilis.

Public Health

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for April, 1943, compared with the same month in 1942, and for the period of January through April, 1943, compared with the same period in 1942, follows:

	Apr. 1943	Apr. 1942	Jan.-Apr. 1943	Jan.-Apr. 1942
Typhoid and Paratyphoid Fever	8	3	44	45
Diarrhea and Dysentery	101	66	422	363
Measles	2,093	959	6,153	3,331
Scarlet Fever	168	103	779	594
Diphtheria	16	24	139	179
Poliomyelitis	0	2	10	3
Meningitis	111	16	495	68
Undulant Fever	3	2	9	8
Rocky Mountain Spotted Fever	0	0	0	1
Tularemia	1	1	23	19

EPIDEMIC MENINGITIS

From July 1942 to the present, the physicians of Virginia have reported 691 cases of Epidemic meningitis. This represents the greatest number of cases of this disease ever reported in one year's time in Virginia. The incidence of the disease is now declining. Only one-third of the number of cases are being reported as compared with the number reported two months ago. However, epidemic meningitis remains nine times above the weekly expectancy.

The seriousness of this disease is not to be minimized. Heretofore the cases of meningitis reported appeared to be rather benign. Within the past year many physicians have stated that the characteristics of the disease they encountered were of a more serious nature. An increasing number of patients have exhibited the petechial rash commonly found in epidemics. All too many have been acute fulminating cases with invasion of the blood stream, while some have exhibited the Waterhouse-Friderichsen syndrome. Cases of meningitis having the Waterhouse-Friderichsen syndrome show adrenal hemorrhages with subsequent death.

The State of Virginia is not alone in facing the problem of epidemic meningitis. The ratio in some neighboring states is found to be higher. Meningitis will decline with the advent of summer weather. With the increasing number of carriers produced by this year's flare-up of meningitis, there is a great possibility that epidemic meningitis will strike again in the coming year.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

The Northampton-Accomac Auxiliary

Held its April meeting at the home of Mrs. W. T. Green, Nassawadox, with Mrs. W. Carey Henderson as joint hostess. Mrs. O. R. Fletcher, president, presided. The Christmas gift of a bassinet and dishes to the Northampton-Accomac Memorial Hospital was announced, and a flower fund for sick members was started with a gift of five dollars from one of the members. At the close of the business meeting, a tribute was paid to the memory of Mrs. Griffin Holland, a former member of this Auxiliary.

A musical program, with two violins and piano, was greatly enjoyed, following which delicious re-

freshments were served. A food sale for general funds closed the meeting.

The July meeting will be an all-day picnic with "covered dish" luncheon at the summer cottage of Mrs. W. L. Cosby at "Silver Beach".

CATHERINE R. TROWER (MRS. HOLLAND),
Chairman, Press and Publicity.

Richmond Academy of Medicine.

We feel that we have been very fortunate this year in having such interesting speakers. At our January and February meetings, Mrs. Fred Shaw spoke on "Economic Life and Native Customs in the Philippines" and in March, Dr. E. C. Harper gave a talk on "Preparation for Emergency Medical Aid in Virginia".

The annual benefit bridge party was held on May 21st, the proceeds to go toward the maintenance of our room at the Sheltering Arms Hospital.

MRS. B. B. BAGBY, JR.,
Publicity Chairman.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Convulsive Seizures. How To Deal With Them. A Manual for Patients, Their Families and Friends. By TRACY J. PUTNAM, M.D., Professor of Neurology and Neurosurgery, College of Physicians and Surgeons, Columbia University; Director of Services of Neurology and Neurosurgery, Neurological Institute of New York. Philadelphia. J. B. Lippincott Company. 1943. xv-168 pages. Cloth. Price $2.00.

Hope Deferred. By JEANETTE SELETZ. New York. The Macmillan Company. 1943. 536 pages. Cloth. Price $2.75.

Stay Young and Live. Common Sense About Health in War Time. By J. CLARENCE FUNK, Sc.D., Director of Education, Virginia State Department of Health. The Dietz Press, Richmond, Va. 1943. Cloth. 125 pages. Price $1.75.

To the average lay reader, *Stay Young and Live* by J. Clarence Funk, Sc.D., is a delightful form in which to imbibe health precepts. Who cannot, except indeed the very youthful, be appealed to with the declared aim of prolonging or, in fact rediscovering, his youth? Dr. Funk writes in a clear, uncomplicated style with a refreshing strain of humor throughout.

The first seventeen chapters, covering eighty-five pages, deal with everyday health practices and common sense advice based on scientific knowledge. The possible exception to this might be found when extolling the virtue of swimming as exercise. Dr. Funk does not mention the injury done the nasal passages in diving and underwater swimming. The last forty pages present in a more sober fashion the dangers and caution signals to be observed when they arise.

Over twenty years spent in public health education well qualify Dr. Funk to write about the current needs of the day to meet the demand for more man hours on the job and fewer physicians available to care for illnesses. Therefore *Stay Young and Live* has a double purpose: to give patriotic citizens, intent on all war efforts, sound advice on maintaining health, and to show everyone anxious to enjoy a real enduring youth how to go about it.

J. R. P.

Bacteriology Laboratory Methods. By E. S. KING, M.D., Professor of Bacteriology, Bowman Gray School of Medicine of Wake Forest College; Bacteriologist to the Baptist Hospital, Winston-Salem, N. C. Charlotte Medical Press, Charlotte, N. C. 1941. 175 pages plus index. Cloth. Price $2.50.

The author presents his Bacteriology Laboratory Methods as a guide to laboratory work in medical bacteriology for both medical students and for students who do not expect to study medicine. The subject matter is divided into three parts: General laboratory procedures, introductory bacteriology and serology, general medical bacteriology and serology.

The description of the different methods is satisfactory; however, it would be helpful to describe the results to be expected after the methods (e.g., staining methods) have been correctly applied. The student would also appreciate the quoting of the page where a procedure which refers to some other method is mentioned. On page 99, e.g., the author remarks "See table II" without telling that this table appears on page 102. On page 100 it reads "Refer to fermentation table" (which happens to be the same table mentioned before). There are also a number of typographical errors which should be corrected in a next edition. May we ask for a revised and completed index at the same time?

F. J. v. G.

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New and Nonofficial Remedies, 1942, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1942. Cloth. Price, postpaid, $1.50. Pp. 671—XCVII Chicago. American Medical Association, 1942.

Perhaps the most important feature of this new volume of New and Nonofficial Remedies is the radical rearrangement it has undergone, with a view to making the contents more accessible and therefore more valuable to the physician or other interested readers. The new arrangement is primarily according to therapeutic use, chemical classification being introduced by means of subheadings. In addition, the typographic style has been changed so as to give greater prominence to the products of individual manufacturers.

The Council has admirably performed its annual task of keeping the text abreast with the progress of medicine. The authoritative and compendious section of the sulfonamide derivatives is an outstanding example, as also is the chapter, Vitamins and Vitamin Preparations for Prophylactic and Therapeutic Use. Many other newly accepted drugs are listed also.

The indices of the new volume of New and Nonofficial Remedies are of the same order and plan as in previous editions. A general index lists accepted articles, including those not described. This is followed by an index to distributors in which appear all the Council accepted articles listed under their respective manufacturers. Finally, a bibliographical index is added for listing proprietary and unofficial articles not included in N.N.R. This includes references to the Council publications concerning each such article as has appeared in *The Journal of the A.M.A.*, Reports of the Council on Pharmacy and Chemistry, Propaganda for Reform, Vol. 1 and 2, or Reports of the A.M.A. Chemical Laboratory.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1941, with the Comments That Have Appeared in The Journal. Chicago. American Medical Association, 1942. Price $1.00.

The Council on Pharmacy and Chemistry recently issued the thirty-third edition of the Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association. This contains in compact form not only the reports of the Council which have been published in THE JOURNAL during the past year but also some additional reports which were not considered of sufficient importance to be published in THE JOURNAL. The reports may be divided into four classes: reports rejecting products as not being acceptable for inclusion in New and Nonofficial Remedies, reports omitted from New and Nonofficial Remedies products that have previously been accepted, reports on the nomenclature of various substances and reports in which the Council gives decisions of general interest or summarizes the latest scientific knowledge concerning certain topics.

The nomenclature reports deal for the most part with the Council's adoption of nonproprietary designations for comparatively new products such as diethylstilbestrol, menadione and sulfadiazine. Explanations are given for the omission at this time of products which have previously been included in New and Nonofficial Remedies.

The volume also includes the reports rejecting various products—which have either been submitted by the manufacturer or considered on the Council's own initiative—and which have been found not acceptable for inclusion in New and Nonofficial Remedies. Also incorporated is a brief summary of the decisions arrived at by the Council at its latest meeting.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Brunschwig, A.—The surgery of pancreatic tumors.

Dack, G. M.—Food poisoning.

Evans, E. A., Jr.—The biological action of the vitamins.

Habas, R. A.—The art of self-control.

Jackson, A. S.—The answer is your nerves.

Jordan, E. P., ed.—Standard nomenclature of disease and standard nomenclature of operations.

Kahn, F.—Man in structure and function.

Kugelmass, I. N.—Modern pediatric practice.

Loomis, F.—The bond between us.

Pohl, J. F.—Concept of infantile paralysis.

Slack & Gunderson—Laboratory manual for medical bacteriology.

Smillie, W. G.—Public health administration in the U. S.

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Editor Emeritus

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Editor

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 70 JUNE, 1943 No. 6

Nicholas Copernicus, M. D.

THIS year marks the 400th anniversary of the death of Copernicus. The fame of this great Pole is so overwhelming in astronomy, that we are apt to forget that he was a physician and practiced his profession successfully. Copernicus had a large practice among the poor and was much sought after by the nobility. As a matter of fact, he had many talents. It has been said of him that he was "a churchman by the wish of his guardian-uncle and by vocation, an artist for relaxation, a physician by training and predilection, an economist by accident, a statesman and a soldier by necessity and a scientist by the Grace of God and by sheer love of the truth for truth's sake".

These 400 years have seen great changes. Copernicus had no microscope nor telescope. Things were as they appeared on the surface, and it was dangerous to look below the surface, if indeed, that were possible. Printing was just out of its cradle and few people could read or write. The ruling classes were illiterate and the lower classes were little better than slaves. They belonged to the land and could not leave it except to fight their master's battles. Great kings such as Henry VIII of England and Francis I of France lived in less comfort than artisans do today, and in the realms of travel and communication they were the veriest tyros compared to the average mechanic of our time.

What sort of medicine did Copernicus practice? When he was a student at Padua, the general texts were those of Galen, Hippocrates, Avicenna and Averroes. The anatomy that was taught him was derived from the study of monkeys and lower animals. Versalius' de Fabrica which marks the beginning of modern anatomy appeared the year Copernicus died. The other medical disciplines were rhetoric, philosophy, mathematics and astronomy. Harvey's great work, the very foundation of physiology, lay in the future, as did also the pioneer work in pathology of Malighi and Morgagni. Practice in Copernicus' day consisted principally of purging and bleeding, and when to purge and where to bleed was determined by urine-casting or star-gazing.

The span of human life was short. In 1590 the average duration of life was 30.9 years as compared to 62.9 years in 1940. Between the high infant mortality, the wars

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and the great epidemics that swept over Europe, the population was stationary. Medicine was helpless in the face of the great plagues. Small pox raged at will and one rarely saw an adult who was not pockmarked. Syphilis was even a greater scourge. Its treatment by mercury did not begin until after Copernicus (Thierry de Hery, Paré). Hundreds of leprosaria were scattered over Europe, but hospitals as we know them today were non-existent.

Medical Students On Army Pay

THE powers of the Federal Government have been the subject of controversy ever since the Constitution was ratified by the Original States. Hamilton led those who favored a strong central government, and Jefferson those who believed in local self-government with the Federal Government doing only what was beyond the powers of the States—foreign relations, postal system, etc. The balance of power between the Federal Government and the States has never been settled. It has been the cause of duels and of civil war. Through the years the central government has grown constantly stronger and that of the States proportionately weaker. Most of this gain has been brought about by constitutional amendments and legislative enactments. Each war accelerated the process. Rarely does the Federal Government relinquish any authority it has once gained, control over the railroads in World War No. 1 being a notable exception.

Even before World War No. 2, the government in Washington began to use a new technique in extending its authority. It began to use its tremendous monetary power. By offering grants or bonuses if the States would undertake certain measures in accordance with specifications drawn up in Washington, the Federal Government gained control of various functions of the States; notably roadbuilding, certain public health activities, and relief measures. Whether these measures are wise or not is beside the point. The fundamental principle involved is the important thing. If the trend towards centralization continues at the same rate, what will become of State Governments? Will they become merely historical vestiges like the urachus or the obliterated hypogastric arteries?

The Federal Government has recently extended its influence to the field of education. In this move they are using a two-edged sword—monetary power and the control of patronage. Except for girls and a few rejectees, it has absolute power over the youth of the land. Uncle Sam says to the able-bodied youth of the nation who shall go to school and what they shall study. The liberal arts colleges are hard put to justify their existence. In this total war such control is no doubt necessary. We hope that the love of learning will not be entirely suppressed. The U. S. S. R. seems to be able to take an interest in cultural affairs and at the same time do a pretty good job at waging war. It recently celebrated Sir Isaac Newton's 300th anniversary in seven different cities.

As to the future of medical education, Wingate Johnson in an editorial, "Quid Pro Quo", in the March issue of the *North Carolina Medical Journal,* paints a very gloomy picture. He points out that the recent provision for paying the medical student's tuition and maintenance, and allowing him fifty dollars a month pocket change is entirely unnecessary. There is not a medical school in the country that has not for years turned away more applicants than they could take. There is nothing to indicate that this condition would not have continued if the prospective medical student had been given a deferred rating by the draft boards. There was no reason for paying him. There must have been an ulterior motive, and this, Wingate Johnson more than hints, is the control of medical education.

Societies

Virginia State Board of Medical Examiners.

The following applicants were granted licenses to practice medicine at the meeting of the Board held March 24-27. There were no failures.

Dr. John Dean Adams, Martinsburg, W. Va.
Dr. Horace Allen Albertson, Richmond.
Dr. Joseph French Alsop, Prospect.
Dr. Lawrence Edward Banks, Sacramento, Calif.
Dr. Walter Protho Barnes, Jr., Charlottesville.
Dr. Margaret A. Barnes, Charlottesville.
Dr. Alfred Allen Berger, Staten Island, N. Y.
Dr. Monte LeRoy Binder, Richmond.
Dr. Charles Porter Blunt, III, Lynchburg.
Dr. Oliver V. Bobbitt, Jr., Charlottesville.
Dr. Armistead Page Booker, Charlottesville.
Dr. Katherine Brandon, Virginia Beach.
Dr. Catherine Harman Brewer, Brooklyn, N. Y.
Dr. Hugh Sharp Brown, Sayre, Pa.
Dr. Richard Booth, Jr., Lynchburg.
Dr. John Lewis Brown, Erie, Pa.
Dr. Charles William Byrd, Louisa.
Dr. Eugene Callaway, Jr., Selma, Ala.
Dr. Joshua Frye B. Camblos, Charlottesville.
Dr. Robert Edward Carr, Clinton, N. C.
Dr. Stuart Harrison Catron, Jr., Marion.
Dr. Donald Paul Chance, Charlottesville.
Dr. William Chapman Chilton, Memphis, Tenn.
Dr. James Logan Chitwood, Sylvatus.
Dr. William S. Clifford, Austin, Texas.
Dr. Custis L. Coleman, Lexington.
Dr. James Thomas Colley, Charlottesville.
Dr. Sidney W. Cohen, Portsmouth.
Dr. William C. Cook, Jr., Charlottesville.
Dr. Lewis F. Cosby, Jr., University.
Dr. John James Dobbie, Fairmont, W. Va.
Dr. William D. Dolan, Jr., Washington, D. C.
Dr. Edwin Marion Eastham, Washington, D. C.
Dr. Thomas Stilwell Edwards, University.
Dr. George Bleecker Ely, Charlottesville.
Dr. Paul Fleming-Holland, Maywood, Ill.
Dr. Hal Stanfield Floyd, Fairmont, N. C.
Dr. Thomas Carter Fowlkes, Selma, Ala.
Dr. Joe Lee Frank, New York, N. Y.
Dr. William Joseph Frohbose, Richmond.
Dr. Irvin Galin, Portsmouth.
Dr. Fleming Wood Gill, Richmond.
Dr. Giles Quarles Gilmer, Lebanon.
Dr. George R. Gish, Bluefield, W. Va.
Dr. Milton Sidney Goldman, Norfolk.
Dr. William Samuel Grizzard, Drewryville.
Dr. Dale Groom, Chicago, Ill.
Dr. George Lester Grubb, Charleston, W. Va.
Dr. William Dandridge Haden, Jr., Charlottesville.
Dr. William Joseph Hagood, Jr., Corbin, Ky.
Dr. Abran Ernest Handy, Jr., Stuart.
Dr. Rodgers Winters Harshbarger, Richmond.
Dr. William F. Harrell, Portsmouth.
Dr. Edward R. Hawkins, Marion.
Dr. Charles H. Henderson, Jr., Bonny Blue.
Dr. Charles Albert Hudson, Luray.
Dr. Cecil Guy Hupp, Washington, D. C.
Dr. Carl William Irwin, Charlottesville.
Dr. Lawrence A. Jacklin, Alexandria.
Dr. Fontaine G. Jarman, Roanoke Rapids, N. C.
Dr. William S. Johnson, Montclair, N. J.
Dr. Eugene Rhodes Johnston, Birmingham, Ala.
Dr. Charles Franklin Jones, Jr., Lynchburg.
Dr. George Barnard Kegley, Bland.
Dr. Eucebius Milton Kellam, Richmond.
Dr. Joseph Kessler, Leaksville, N. C.
Dr. John Marcus Kester, Jr., Columbia, S. C.
Dr. Melvin Bernard Lamberth, Jr., Woods Cross Roads.
Dr. Henry Byron Landaal, Waupun, Wis.
Dr. Andrew Martin Lang, Saint Cloud, Fla.
Dr. William Thomas Lawson, Richmond.
Dr. Randolph Leigh, Jr., Charlottesville.
Dr. Claude Marshall Lee, Richmond.
Dr. Francis Brown Lee, Monroe, N. C.
Dr. Earl J. Levine, Philadelphia, Pa.
Dr. Camillus S. L'Engle, Jr., Jacksonville, Fla.
Dr. Grace Kathryn Lightfoot, Richmond.
Dr. Myrtle Evelyn Logan, University.
Dr. Annie Belle LoGrippo, Richmond.
Dr. Donald David Markowitz, Jersey City, N. J.
Dr. Samuel Perry Marshall, Washington, D. C.
Dr. Frank Armstrong McCue, Bluefield, W. Va.
Dr. Charles Gillett McKendree, Charlottesville.
Dr. Dana Covington Mitchell, Jr., Bluefield, W. Va.
Dr. Robert Eugene Moffatt, Shelby, Ohio.
Dr. Thomas Lee Mosby, New River, Tenn.
Dr. John Sargent Morris, Jr., Richmond.
Dr. Dorothy Diehl Moore, Richmond.
Dr. Walter Shirley Nicklin, Jr., Alexandria.
Dr. Raney Archer Oven, University.
Dr. Herbert Rowland Pearsall, Roanoke.
Dr. William Robert Perkins, Jr., Washington, D. C.
Dr. John Brewer Petter, Cleveland, Ohio.
Dr. Carrol LeVan Plott, Delaware County, Pa.
Dr. John Russell Potter, Troutville.
Dr. Jess Averette Powell, Jr., Edenton, N. C.
Dr. John David Powell, Stuart.
Dr. James Guy Price, Charlottesville.
Dr. George Nicholas Psimas, University.
Dr. Robert Hubbard Putney, Jr., Elm City, N. C.
Dr. Lucile Welsh Richardson, Salem.
Dr. Charles Russell Riley, Atlanta, Ga.
Dr. Charles Lester Salmon, Richmond.
Dr. Charles Frederick Schneider, Charlottesville.

Dr. George Fay Schuster, Toledo, Ohio.
Dr. Percy Everett Schools, Jr., Richmond.
Dr. John Scott Shaffer, Wytheville.
Dr. James Avon Smith, Richmond.
Dr. Nelson Montgomery Smith, Winchester.
Dr. Russell Nelson Snead, Midlothian.
Dr. Joshua Price Sutherland, Charleston, W. Va.
Dr. Robert McKinney Tankesley, Chattanooga, Tenn.
Dr. Arthur Hastings Taylor, Jr., Richmond.
Dr. John Covington Tinsley, Jr., University.
Dr. Wiley Burns Trivett, Jr., Georges Fork.
Dr. Garnet Roy Tureman, Jr., Richmond.
Dr. Horace R. W. Vial, Richmond.
Dr. Donald Walters, Charlottesville.
Dr. Charles Harper Ward, Pocahontas.
Dr. Walter Motley White, Jr., Charlottesville.
Dr. John Knox Wilson, Richmond.
Dr. Robert Manton Wilson, Jr., Richmond.
Dr. Thomas Adams Witten, Richmond.
Dr. William Hugh Womble, Greensboro, N. C.
Dr. William Haller Woodson, Roanoke.
Dr. Edwin Wortham, IV, Richmond.
Dr. Harold Stanley Yood, Syracuse, N. Y.
Dr. Eugene James Yorkoff, Charlottesville.
Dr. Charles Gravely Young, Richmond.

Those licensed through endorsement of credentials are:

Dr. Samuel Righter Berenberg, Arlington.
Dr. Harry Randolph Boffman, Portsmouth.
Dr. Edgar Pasqual Copeland, Washington, D. C.
Dr. Natalie Johnson Deyrup, New York, N. Y.
Dr. Charles William Peterson, Pleasantville, N. J.
Dr. James Andrew Rooney, Newport News.

Albemarle County Medical Society.

At the meeting of this Society on May 6th, Dr. Harrison Flippin of Philadelphia, son of the late Dr. J. C. Flippin, former dean of the Medical School of the University of Virginia, gave an address on "Clinical Observations of Sulfamerazine and Penicillin". This meeting was well attended and a number of doctors from the new Wilson Army Hospital at Staunton were present. At the business session, five doctors were admitted to membership. Dr. D. C. Wilson of the University is president and Dr. M. K. Humphries, Jr., Charlottesville, secretary.

Tazewell County Medical Society.

At its May meeting, this Society elected its delegate and alternate to the meeting of the Medical Society of Virginia, October 25-27. Dr. W. E. Baker of the Venereal Disease Control Bureau of the State Health Department was the speaker of the evening, the subject of his talk being "The Diagnosis and Treatment of Gonorrhea".

The president and secretary of this Society are Dr. M. B. Crockett and Dr. Mary E. Johnston, respectively, both of Tazewell.

Joint Meeting.

The Clinch Valley and Wise County Medical Societies met in Norton on May 30th, under the joint presidency of Dr. C. H. Henderson and Dr. J. J. Porter, both of Norton, representing these societies, respectively. The scientific program, which followed dinner, was held with the cooperation of the Department of Clinical and Medical Education and the Committee on Industrial Health of the State Society, and included discussions on "Toxicity on Military Explosives and Comments on Preventive Hygienic Work" by Dr. J. E. Williams, medical director of Holston Ordnance Works at Kingsport, Tenn., and "Leukorrhea" with slide explanations by Dr. William Bickers of Richmond.

Montgomery County Medical Society.

At the meeting of this Society held at Radford on May 10th, Dr. A. M. Showalter, of Christiansburg, president, presided, and there was an attendance of twenty-three. A committee to cooperate with the Regional Cancer Foundation was appointed with Dr. John J. Gieson as chairman and Drs. S. H. Nixon and F. B. Huffman other members. The question of a clinic for planned parenthood to be held by the Health Department of Montgomery County was discussed at length and approved by the Society. Dr. Showalter was re-elected president and Dr. J. L. Early, vice-president. Dr. R. H. Grubbs was elected secretary-treasurer. New members taken in at this meeting are Drs. L. E. Delap and L. M. Davis.

Dr. J. M. Bishop, Roanoke, presented a very interesting paper on the thymus gland in children, illustrated with x-ray pictures, and Mr. M. Haskins Coleman, Richmond, Director of the Hospital Service Association, spoke on "Emergency Medical Service", explaining in detail the type of service this organization renders.

The Roanoke Academy of Medicine

Held its regular meeting on May 3rd. The following scientific program was presented: Coarction of Aorta: Report of Two Cases by Dr. David S. Garner and Capt. George W. McCall, MC.; Acrodynia by Dr. Fred F. Davis; Treatment of Burns by Dr. J. M. Bishop; A Rare and Interesting Tumor

in an Elderly Man: Report of a Case by Dr. B. P. Seward; and Executive Director's Report of Local Blue Cross Hospital Service Plan by Mr. Leonard Key.

Dr. Paul Davis is President of the Academy and Dr. Ruth Barnhart, Secretary.

Lynchburg Academy of Medicine.

At the regular meeting of the Academy on May 3rd, Dr. J. M. Emmett, President of the Medical Society of Virginia, and Dr. J. R. Beckwith, his medical associate at the C. & O. Hospital in Clifton Forge, were guests, and presented a very interesting discussion of the diagnosis and newer methods of treatment of post-operative thrombophlebitis. They were particularly enthusiastic about their newer methods of ligation of the femoral veins and felt there is a definite opportunity to reduce considerably the incidence of fatal embolism when the thrombophlebitis can be diagnosed. Both papers were enthusiastically discussed by Dr. J. E. Haynsworth and other members of the Academy. Prior to the meeting, members of the Academy entertained the guests at dinner at The Columns.

Dr. S. H. Rosenthal and Dr. L. R. O'Brian, Jr., are president and secretary, respectively, of this organization.

News

Make Your Reservations for the State Meeting.

Now is the time to begin thinking and planning for the meeting of the Medical Society of Virginia in Roanoke, October 25-27. Headquarters will be Hotel Roanoke which is an ideal convention hotel. Rates are given for this, the Patrick Henry and the Ponce De Leon, both of which are in the heart of the business district but in easy walking distance to the meetings.

HOTEL ROANOKE
Old Section—Non-Air Conditioned
Single—$3.00 and $3.50.
Double—$5.00 and $6.00.
New Section—Air Conditioned
Single—$3.50, $4.00 and $4.50
Double—$6.00, $7.00 and $8.00

PATRICK HENRY HOTEL
Single—$2.50 to $6.00
Double—$5.00 to $8.00

PONCE DE LEON HOTEL
Single—$2.50 to $3.00
Double (double bed)—$4.00.
Double (twin beds)—$5.00 and $6.00.

Dr. John O. Boyd is general chairman for the meeting. Names of those assisting him were published in the April MONTHLY.

Virginia Society of Ophthalmology and Oto-Laryngology.

The twenty-fourth annual meeting of this Society was held at the Virginian Hotel in Lynchburg on May 15th, under the presidency of Dr. Guy Fisher, Staunton. The guest speakers were Drs. Alan C. Woods and W. Raymond McKenzie both of Baltimore. Members of the Society appearing on the program were Drs. E. G. Gill and J. H. Gressette, Roanoke; Dr. E. T. Gatewood, Richmond; Dr. H. G. Preston, Harrisonburg; Dr. P. N. Pastore, Richmond; Dr. Charles T. St. Clair, Bluefield, W. Va.; and Dr. F. H. McGovern, Danville.

The newly elected officers are Dr. E. T. Gatewood, Richmond, President; Dr. James R. Gorman, Lynchburg, President-Elect; and Dr. Meade Edmunds, Petersburg, Secretary-Treasurer (re-elected).

Lynchburg was again selected for the meeting next year.

Married.

Dr. John Sargent Morris, Jr., Lynchburg, and Miss Elizabeth Cobey, Albany, Ga., April 28th. Dr. Morris is a graduate of the Medical College of Virginia, class of 1943, and is serving his internship at the College Hospitals.

Dr. John David Powell, Stuart, and Miss Mable Kathryn Minter, Martinsville, April 24th. Dr. Powell graduated from the Medical College of Virginia this year and is serving an internship at the Norfolk General Hospital, Norfolk.

Dr. Luther Bradford Waters, Jr., Norfolk, and Miss Margaret Mae Hughes, Colerain, N. C., May 17th. Dr. Waters is a graduate of the Medical College of Virginia in 1941.

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New York Polyclinic Medical School and Hospital.

At the regular meeting of the Clinical Society of this School, held on May 3rd, the following program was presented: The Sulfonamides by Dr. James P. Croce; Blood Pressure and the Total Individual by Dr. John Carroll; The Treatment of Paroxysmal Tachycardia and Auricular Fibrillation by Dr. Harold E. B. Pardee; The Management of Lung Abscess by Dr. George G. Ornstein; Apocrine Breast Cancer (Colored Motion Picture) by Dr. Herbert C. Chase; Evaluation of Excretion Urography as Compared with Instrumental Urography by Dr. Joseph F. McCarthy; Gastroduodenal Ulcer: Its Surgical Approach by Dr. Robert E. Brennan; The Hypertonic Infant by Dr. Sidney V. Haas; Premature Babies by Dr. W. Morgan Hartshorn; Endometrial Implant Occurring in Abdominal Scar Following Cesarean Section by Dr. Edward H. Dennen; The Treatment of Empyema as a Postoperative Complication by Dr. Henry I. Goodman; Three Simple Tests for Bedside and Office Diagnosis of Liver Diseases by Dr. Samuel Weiss; and The Status of Gastroenterology in Medicine by Dr. G. Randolph Manning.

Social Forces Compel Professional Planning for Medical Economy.

Mr. Francis I. Libby, Manager of the Piedmont Hospital Service Association in Lynchburg, has called attention to an omission in the manuscript of his article on the above subject, which appeared in the May MONTHLY, pages 257-260. On page 259, Section (5), the last sentence of last paragraph of part (*c*) should read: ". . . and, obviously, compulsory hospital insurance is too closely allied with compulsory medical care to be far removed from it in legislative proposals." He hopes this will clear up this perplexing statement.

Dr. J. L. Kinzie,

Who has served in the Army Medical Corps since last August, has been retired from active duty because of physical disability and has resumed his private practice in Salem.

News from the Medical College of Virginia.

Dr. J. P. Gray, dean of the school of medicine; Dr. John P. Lynch, Jr., associate in medicine; Dr. Harry Walker, associate professor of medicine; and Dr. Douglas Chapman, associate in medicine, attended the regional meeting of the American College of Physicians in Washington recently.

Dr. Donald S. Daniel, assistant professor of surgery, recently spoke to the surgical section of the Medical Society of the State of North Carolina at its Durham meeting. During the State society meetings an alumni chapter of the college was organized, with Dr. B. C. Willis of Rocky Mount as president. Dean J. P. Gray, Dr. O. B. Darden, associate professor of neuropsychiatry; Dr. Charles Outland, assistant professor of preventive and public health medicine and president of the general alumni association; and Dr. Daniel attended the alumni meeting.

Dr. E. I. Evans, assistant professor of surgery, attended the War-Time Graduate meeting, sponsored by the American College of Physicians, American College of Surgeons, and the American Medical Association, held in Atlanta, giving a talk on the treatment of burns and shock.

Dr. C. C. Coleman, professor of neurological surgery, attended the meeting of the American Neurological Association in New York, giving a paper on the "Treatment of Peripheral Nerve Injuries". He also gave the oration on surgery at the annual meeting of the West Virginia State Medical Society in Charleston on May 18, his subject being "Neurosurgical Procedures for the Relief of Pain".

Dr. W. T. Sanger, president, and Dr. J. P. Gray, dean, attended the annual meeting of the West Virginia State Medical Society and the alumni luncheon held in connection with the meeting on May 18.

Dr. P. N. Pastore, professor of otology, laryngology, and rhinology; Dr. E. T. Gatewood, associate professor of otology, laryngology, and rhinology; and Dr. E. U. Wallerstein, associate professor of otology, laryngology, and rhinology, participated in the twenty-fourth annual meeting of the Virginia Society of Ophthalmology and Otolaryngology at Lynchburg on May 15. Dr. Pastore spoke on "Osteomyelitis of the Petrous-Temporal; a Case Report", and Dr. Gatewood on the "Mechanism of Esophageal Voice following Laryngectomy". Dr. Wallerstein participated in discussions of papers.

Dr. Antonio De Vasconcellos Marques of Lisbon recently spent a week in Richmond as the guest of Dr. C. C. Coleman, visiting the neuro-surgery clinics. Dr. Marques is visiting the neuro-surgery clinics throughout the United States.

Dr. W. T. Sanger, president, attended a nutrition meeting in Newport News, speaking on the subject of nutrition, recently. He is chairman of the State Nutrition Committee.

Dr. Harvey B. Haag, professor of pharmacology, and Dr. Lee E. Sutton, Jr., professor of pediatrics, addressed the Cabell County Medical Society in Huntington, West Virginia, on May 13, Dr. Haag speaking on the "Pharmacology of Sulfonamides" and Dr. Sutton on the "Use of Sulfonamides in Pediatrics".

News from the University of Virginia, Department of Medicine.

The University of Virginia chapter of Alpha Omega Alpha held a meeting on April 26th for the purpose of the initiation of seven new members. Dr. Allen O. Whipple of the Department of Surgery of Columbia University, New York City, spoke on the "Principles and Treatment of Burns".

Dr. Harrison F. Flippin of Philadelphia spoke on "Clinical Observations on Sulfamerizine and Penicillin" at the meeting of the University of Virginia Medical Society held on May 6th.

Several members of the staff of the Schools of Preventive Medicine and Bacteriology and of Clinical Pathology of the University of Virginia Medical Department attended the meetings of the Bacteriology Section of the Virginia Academy of Science in Richmond on May 11th. Dr. Francis Smith collaborated with Dr. J. D. Reid of the Medical College of Virginia in presenting a paper on "Tropical Mycology". Dr. Thomas S. Englar presented a paper entitled "War Time Problems of a Local Health Department". At the afternoon session Dr. George McL. Lawson spoke on whooping cough diagnosis and prevention. Dr. Ralph B. Houlihan, Secretary of the Bacteriology Section of the Academy, secured for the program eight papers dealing with military and civilian problems of communicable disease control and preventive medicine.

Dr. C. W. Lynn

Resigned his position as one of the city physicians of Petersburg, effective May 1, and will devote his time to private practice.

Free Supplement to U.S.P., XII.

Notice is hereby given to owners of all copies of the U.S.P. XII to fill in and mail the post card order which is tipped inside the back cover of the U.S.P. XII, and which entitles the holder to a copy of the First U.S.P. XII Bound Supplement soon to be issued. It was not expected that this Supplement would be issued until about two and one-half years after the appearance of the U.S.P. XII, but changing conditions and wartime demands have necessitated its immediate publication. The Supplement itself will carry a similar order form for a Second Bound Supplement, should the latter be required before the appearance of the U.S.P. XIII.

It is expected that the First U.S.P. XII Bound Supplement will be available within two months and when it becomes available immediate shipment will be made without further cost to those who mail in their order cards as directed.

Personnel Changes in State Department of Health.

Dr. E. W. Longest is now Acting Health Officer of Norfolk-Princess Anne Counties.

Effective June 1, Dr. James A. Dolce, former Health Officer of Fairfax County, will be assigned as Health Officer of Prince William and Stafford Counties with headquarters at Manassas.

Dr. S. D. Sturkie, former Health Officer at Marion, has been appointed Health Officer of Lynchburg. The vacancy at Marion has not yet been filled.

Pediatric Antiques on Tour.

The Mead Johnson Collection of Pediatric Antiques bears eloquent witness to the great strides made in the feeding part of pediatrics. This exhibit depicts the progression of infants' feeding vessels from the Greece of twenty-five centuries ago down to time within our own memory. The collection has been steadily growing in size and scope and is of increasing interest for teaching purposes via the historical route. The destruction of original sources caused by the war tends to add to the value of these objects. Hence it is that, by request, the Collection now goes on an annual pilgrimage to colleges, hospitals, museums, libraries and other institutions of learning. Arrangements may be made for "stop-overs" upon application to the curator, Mead Johnson and Company, Evansville, Ind.

XUM

International College of Surgeons.

The fourth international assembly of the College will be held at the Waldorf Astoria Hotel in New York City on June 14-16. Subjects for discussion will deal with "Rehabilitation" and "War Surgery". Papers will be read by eminent authorities and continuous round-table discussions have been scheduled.

The medical profession is cordially invited to attend.

Physicians Needed for Health Work.

The Merit System Council of West Virginia announces unassembled examinations for positions in the West Virginia State Health Department and the West Virginia State Department of Public Assistance. Applications will be accepted continuously, but new registers will be established from applicants who file no later than June 26, 1943.

Positions for which applications are being accepted, and their respective salary ranges, are listed below. Appointments may be made at above the minimum salaries.

Director of Maternal & Child Hygiene	$4200-$4800
Assistant Director, Maternal & Child Hygiene	3840- 4500
Director, Industrial Hygiene	4200- 4800
Director, Vital Statistics	4200- 4800
Director, Communicable Diseases	4200- 4800
Assistant Director of Communicable Diseases (Tuberculosis)	3840- 4500
Assistant Director of Communicable Diseases (Venereal Diseases)	3840- 4500
Venereal Disease Consultant	3840- 4500
Director, Bureau of Dental Hygiene	3840- 4500
Director of County Health Work	4200- 4800
Senior Health Officer	3840- 4500
Junior Health Officer	3360- 3840
Health Officer Trainee	2400
Assistant Director, Hygienic Laboratory	2640- 3240
Senior Bacteriologist	1800- 2400
Senior Serologist	1800- 2400
Consultant Nurse in Special Fields	2400- 3000
Public Health Nursing Supervisor (State)	1920- 2400
Public Health Nursing Supervisor (Local)	1800- 2040
Chief of Medical Services	4800- 5280

Residence in West Virginia has been waived in consideration of applicants for these positions, which offer tenure of office and definite promotional possibilities.

Physician

Desires a position or location where remuneration is weekly or monthly. Address "Physician", care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

Obituaries

Dr. William Meade Burwell,

Prominent physician of Chincoteague, died April 2nd at the Marine Hospital in Baltimore, following an illness of six months, with myocarditis. He was a native of Floyd County and seventy-seven years of age. Dr. Burwell graduated from the Medical College of Virginia in 1895 and had practiced at Chincoteague for more than forty years. For a number of years he was acting assistant surgeon of the U. S. P. H. S. there. Dr. Burwell was active in the civic affairs of the Island, having served as a member of the town council, the Accomack County School Board, and was president of the Bank of Chincoteague. He was a past president of the Accomack County Medical Society and had been a member of the Medical Society of Virginia since 1897. He was also a Mason and a member of the Society of Cincinnati. His wife survives him.

Dr. William Mercer Sprigg,

Well known physician of Washington, D. C., but a native of Petersburg, died March 6, after a brief illness. He graduated in medicine from Columbian, now George Washington University, Washington, in 1885, and for some time was a member of the obstetrical department of its staff. He took a deep interest in the professional life of Washington, where he practiced for fifty-five years. He was also affiliated with several medical organizations, including the Medical Society of Virginia in which he had held membership for thirty years. His wife and a daughter survive him.